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ABSTRACT

This prototype of a guide for educational change agents focuses on the roles and tactics of personnel employed in nonprofit educational research and development organizations and in state and intermediate education agencies. Included is a compilation of reports from recent users of three classes of tactics: information, demonstration, and field agent. These tactics are conceptualized as following an adoption/diffusion continuum whose stages can be labeled, step by step, from awareness through interest and evaluation to actual utilization. Change agent behavior is viewed as ranging from impersonal through personal to interpersonal. The organization of this paper reflects these underlying patterns. At the same time, behavioral sciences and marketing research are brought to bear in an effort to help explain the need for planning and evaluation strategies based on market segmentation, product differentiation, and communication skills. Case studies are briefly discussed, and a table of indicators is provided as a tentative guideline. In conclusion, some policy implications are briefly outlined with a view to initiating greater interaction among practitioners, diffusion personnel, behavioral scientists, and funding sources. A list of references is also provided. (Author/PD)

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TACTICS FOR THE EDUCATIONAL CHANGE AGENT

A Preliminary Analysis

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The stimulus for this preliminary look at tactics in educational R&D diffusion came from Dr. C. L. Hutchins, formerly an Associate Laboratory Director. One of the current Associate Laboratory Directors, Dr. Paul Hood, and the Laboratory Director, Dr. John K. Hemphill, made valuable suggestions that improved the focus of the author's work. However, any flaws or lacunae should not be attributed to them. To the extent possible, the Laboratory would hope to revise these materials from time to time, perhaps on an annual basis, and would appreciate receiving comments, updated information, reports, and field experiences that could be used to strengthen the present entries and/or correct the obvious inadequacies in this prototype version. Only by pooling the accumulated know-how and real-world experiences of the entire educational community can we make a sensible and lasting contribution to the improvement of education for all children.

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INTRODUCTION

Who needs a collection of change-agent tactics? Probably all those responsible for planning and diffusing research-based innovations. Probably many who hold either staff or line positions in state education agencies. Probably all who work in intermediate education agencies. And probably many who set federal education policies. A conceptual scheme is introduced that may allow the educational diffusion community to begin to analyze more clearly some ways of reducing the gap between research and practice. Tactics, arranged along a hypothetical continuum labeled "information," "demonstration," and "field agents," are viewed as progressing from the easy and relatively inexpensive to the complex and costly.

This tentative work is an effort to merge marketing know-how, information science, and some of the early experiments in educational R&D diffusion so that concerned educators can build on the accumulated experience, refine it, scour out the dross, and begin to build a knowledge base for future work in this domain.

The change-agentry tactics analyzed in the following pages are discussed, as will be readily apparent, from the viewpoint of the innovator committed to reducing the much-publicized gap between educational research and development and actual school practice. Probably these tactics fit the perceived needs of R&D agency and state or intermediate educational agency diffusion personnel more comfortably than those of intra-system change agents. But the latter should find most of the ideas and the references useful as they strive to bring about self-renewal of the schools that they are employed to serve.

The theoretical underpinnings stem from Rogers' & Shoemaker's model (1971) of the innovation-decision process (with stages progressing from

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awareness through interest and evaluation to trial and adoption). The change-agent role follows Havelock's (1971) set of "sender" activities: inform, demonstrate, and, finally, train-help-service-nurture. We scarcely deal here with user-system capacity or even with specific product characteristics, since recent Laboratory work in that area is being reported simultaneously in Sikorski & Hutchins (in press). Moreover, we deal only cursorily with positive rewards as a tactic, since no educational case studies could be found to support anything but guesswork in areas other than direct subsidy.

Anyone who plans to make use of the notions outlined in this prototype should be cautioned that the state of the art in educational diffusion is still quite inchoate. None of the studies that has been uncovered to date is longitudinal. Few lasted more than 12 months. Very few document actual costs. The most careful studies have been carried out in marketing, advertising, and public opinion research, or in fields of social science (psychology, sociology, etc.). Unfortunately, most educational experiments in change agentry tend to ignore any type of cost-benefit analysis.

The entries that follow are grouped according to a conceptual scheme that moves from the cognitive (awareness, knowledge) end of an educational change continuum on through the conative (conviction, adoption, utilization). Accordingly, we begin with information tactics (conceived as being impersonal), then move to demonstration tactics (seen as personal), and conclude with field agent tactics (treated as interpersonal). See Figure 1 for a simplification of this hypothetical continuum.

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Agentry Style	Impersonal	Personal	Interpersonal
Agentry Tactic	INFORMATION	/ DEMONSTRATION	/ FIELD AGENTS
Product Characteristic	simple and inexpensive	some risk, moderately difficult and costly	complex, risky, expensive
User Reaction	receives message in print or via AV	is shown product/ process live or via AV	tries product/ process, gets help and service
Product Example	(ALERT Sourcebook)	(Kindergarten Program)	(Man: A Course of Study)

Figure 1: Change-Agent Tactics

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This particular grouping seems to offer a useful heuristic in the sense that we assume that a simple "telling" tactic will suffice to persuade some administrators to subscribe to educational newsletters or journals, some teachers to renew classroom periodical bulk subscriptions, or some librarians to purchase supplementary books in a given curriculum area. Moreover, we assume that "showing" will suffice to induce a subject-matter specialist to purchase a globe or wall map, a workbook to accompany a text, or a film to enrich a curriculum area. Finally, we assume that when the product/process is totally untried, quite complex, rather expensive, and seemingly risky, both the previous stages of information and demonstration will be required plus some additional "training" and "helping" and "servicing" and "nurturing" by an experienced field agent.

We will discuss, in later pages, some implications of market segmentation and product differentiation. Once these skills become part of the repertoire of change agents, they will begin to be able to match available tactics to important product and user-system characteristics. For now, we can only assume that an accumulation of many proven tactics, with ample resources, will be needed to assure installation and utilization of complex, expensive, unfamiliar, risky products/processes that do not readily "fit" the user system's present "capacity" and "willingness" or are not accompanied by powerful positive sanctions (Havelock, 1971).*

Obviously a much fuller discussion of some tactics would be possible. An entire handbook could be written on how one might most efficiently use

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*Some questions may be raised, over time, as to the advisability of inventing and field-testing elaborately engineered solutions to educational problems that, when ready for diffusion, pose seemingly insuperable installation and maintenance difficulties.

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direct mail in attempting to effect educational change. But a number of excellent books on direct mail have already been published; what is not published is the accumulated recent experience of direct-mail practitioners within the educational community itself. Since current direct-mail know-how is invariably a closely guarded "trade" secret, the educational change agent must settle for published reports that might be applicable to a particular immediate problem. (For example, see H.H. Blumberg, C. Fuller, & A.P. Hare, "Response Rates in Postal Surveys," Public Opinion Quarterly, Spring 1974, XXXVIII, n. 1.)

On the other hand, for other entries we have very little useful data at this moment (on-site demonstrations within major urban school districts, for example). Moreover, unless some concerted, cooperative data-collection effort were to be launched to document every significant federally funded experiment in dissemination/diffusion, even the small amount of evanescent information so far available will be irrevocably lost. To paraphrase, those who are prevented from even reading "history" will be condemned to repeat earlier errors.

Anyone who finds these materials useful should probably also take the time to examine two other Laboratory studies: "Promoting Change in Schools" (Turnbull et al., 1974) and "A Study of the Feasibility of Marketing Programming for Educational R&D Products" (Sikorski & Hutchins, in press). Though some overlap inevitably exists, the three publications can be seen as interrelated parts of an emergent entity.

An oversimplified diagram will be found at the end of the paper (pp.66 -67) and a list of selected references is appended in an effort both to encourage additional reading and study and to stimulate a search for and reporting of additional documentation.

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Finally, in terms of underlying philosophy, this paper presumes that American society is not about to be "deschooled" and that federal funding priorities will emphasize intra-system self-renewal rather than any sudden or radical school reform. Individual change agents might prefer that this presumption were about to be reversed, but practicality would suggest for the present that we are likely to continue operating as catalysts to or servitors of a bureaucratic educational system that has shown remarkable stability over time.

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INFORMATION TACTICS*

These tactics include all those that can be classified as one-way "telling"--at the awareness/interest/arousal stage of the adoption process. Included are direct mail, printed matter, publications, periodicals, displays, electronic media, certain types of workshops/seminars, computers, advertising, and publicity. Some cautionary notes are offered as to suitability of certain tactics for certain purposes. Behavioral science findings offer useful guidelines as well.

"Information" alone is unlikely to change attitudes--or behavior.

But the rich literature on information science, consumer behavior, persuasion, and motivation research does provide a number of generalizations that can be helpful to the educational R&D community in its use of information to reduce the gap between research and practice.

Numerous studies provide background on the detached worker (agricultural or educational extension agent), the opinion leader (indigenous community leader), the auxiliary-volunteer approach (PTA, homeroom mother), the lighted school (use of buildings after hours), and the mass media (printed notices, mass mailings, newspapers, etc.) as applied to dissemination of educational information. In all of these instances it is important to keep in mind the well-documented traits of selective listening, selective interpretation, sufficiency of feedback, and scope (one-to-one contacts provide intensity but are rarely economically feasible).

For all of the information tactics to be discussed below, certain behavioral science assumptions may be applicable, such as:

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*A user of only information tactics may also wish to consider a series of utility, objectives, and cost questions arrayed in a later section ("Field Agents," pp.49 -51).

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*the recipient should be invited to participate actively

*effects of communication wear off over time (cf. "sleeper effect")

*use only one side of the argument if the recipient is friendly

*present the strongest arguments at the beginning and/or end of the communication

*explicitly state the conclusions (be sure the recipient understands what he's to do)

*pleasant distraction can often increase effectiveness

*women are often more persuasible than men

*impressive logical arguments should be used with educators

*establish high credibility (similarity to recipient)

*emotional appeals are sometimes more effective than factual ones

Another set of assumptions that undergirds all the tactics to be enumerated grows out of the information-processing characteristics of educators (cf. Chorness et al., 1968) who seem to obtain their information informally because they often lack time to study problems, tend to focus on financial aspects, and need to satisfy many groups. Lacking manpower to get and sort information, they turn to colleagues in their own systems, contacts at professional meetings, fellow administrators, etc. Still, educators are clearly an audience that may be characterized as a group of people trying to solve problems and that often follows a problem-solving sequence that might be labeled in market terms as: awareness, liking, preference, conviction, and purchase. Information-seeking begins when present behavior is felt to be inadquate; nonetheless, anything perceived as "deep change" will seem uncomfortable. Hence, R&D change agents must differentiate between what the practitioner views as routine

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problems and what he views as "novel" problems.

Before deciding on his tactics ("channel"), the R&D communicator must decide whether his information effort is one of screening seekers of information, selecting recipients of information, or both. He needs to know the attitudes of recipients toward his agency (the "source"). He needs to decide whether to package his message in the same format, with the same words, for all recipients. He must be prepared to handle feedback (or response) after information is supplied. He must decide for which items information will be supplied and what resources will be allocated to information (vs. "demonstration," "agents," etc.). Most important, he needs to determine if the recipients are able and/or willing to pay for information (and if so how)--e.g., newsletters, magazines, journals, microfiche, computer service, books, etc. And, of course, he must evaluate his information efforts: Are recipients satisfied? What did they do after receiving information?

So the R&D communicator must review:

What is useful information?

Who most needs the information?

What kind is needed by whom?

How much? (Perfect information may demand so much time and effort that no decision can be reached.)

Following this review, the communicator begins his internal search process: under what conditions can the information be delivered to a given audience--and what are the most cost-effective ways of influencing practitioners with information? At the very simplest level of targeting the

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information, the communicator in education must differentiate among, for example, the college, elementary school, high school, junior college, public/parochial, proprietary, adult education, and preschool market segments. Then he must also differentiate among funding agencies, school boards, administrators, teachers, paraprofessionals, librarians, counselors, trainers of teachers, legislators, parents, and so on.

The Early Childhood Preventive Curriculum Project in Florida looked at its market this way:

Florida elementary & secondary schools	- 1,945
Only elementary	- 1,458
Only with 1st grade of a least 100 pupils	- 544
Only those with 18+ pupils retained in 1st grade for a least 3 consecutive years	- 92
Potential adopters	- 92

Another standard type of targeting decision arises from renting a mailing list owned by a reputable list owner. Suppose a communicator wants to use the National Council of Social Studies mailing list. He must consider (geographically) whether he wants to eliminate its foreign (non-U.S.) membership, or names in certain sections of the U.S. Can the list owner make other breakdowns (rural/urban/suburban; well-to-do, low-income; class of membership, etc.)? Does the list contain only current paid-up members, or are some names compiled and others "expires"? After all these questions, it may be profitable to consider: subject area (social studies); grade level (high school); discipline (sociology); ability level (slow learners); and perhaps other categories in targeting the actual

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curricular message sent to the portion of the audience selected out of the larger universe.

Ideally, the communicator--in selecting tactics--would state the objectives in behavioral terms:

For example:

> "I will deliver by mail a 4-page information message on Product 'X' to 17% of the elementary principals in the 11 Southeastern states; 30% or more of these will respond by postage-paid return mail before February 17, asking for a free-examination copy of the teacher guide."

Prior decisions would have been reached, of course--the principal can make such a decision on his own, information sent to a single superintendent would not flow down to all the principals, the college preservice market is not the best way to penetrate the elementary school classroom, mail is a medium less costly than personal visits to schools, principals are not averse to sending for teacher guides by mail, Product "X" will be useful to this specific audience, its merits are explainable by mail, the budget can absorb giving away a specified number of gratis books, possession of the book by principals will lead to a desired outcome because an action message inserted into the book will guide the recipient to adopt Product "X", adoption cannot occur without the teacher guide first being examined inside the elementary school building, etc.

Educators, by and large, are not used to paying for information as an end in itself. They are accustomed to getting much of their information free--and schools and colleges tend to be deluged with information. Hence few are willing to spend large sums to obtain "good" information--and very

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few know the cost of not having information. (Both the military and industry, which know the cost of not having "good" intelligence, are willing to pay for information.) Therefore, the R&D agency communicator would probably be wise if he/she did not expect that a rational decision-making process will be used by most of the recipients of the targeted information.

Nonetheless, whatever tactics may be chosen for whatever audience, the R&D communicator should not forget that people learn actively--and that the information provided to that audience is one means of bringing about a form of "learning." Hence, in preparing any information message, the communicator should consider each of these "learning" notions: interest, repetition (e.g., visuals), clarity, learner motivation, small steps, content pertinence, and mixing fact and feeling.

With a few exception (e.g., direct mail) the information tactics to be considered are limited to gaining awareness and interest; many will not lead directly to adoption if used alone.

One further cautionary note. Almost no hard data on actual costs of providing information will be found here. It would be possible--even feasible--to obtain such costs, but very few R&D or state/intermediate agencies seem to have compiled them. Since the personnel involved in public information roles in education carry out varied and overlapping functions (e.g., keeping the agency visible to the general public, servicing visitors and general mail inquiries, providing internal staff communications, etc.) and since nearly all are employed in nonprofit organizations, there has been little incentive or opportunity to compile and compare precise cost figures broken out by task or by product. If actual personnel costs were available (along with easily available out-of-pocket expenses

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for printing, postage, etc.), the problem of actually tracking outcomes at user sites would remain. If the user's decision is given a total value of 100, was the information campaign (that led to adoption of an innovation) worth 30 points of that total? Were 10 children affected by the adoption, or 10,000? And so on.

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Some Information Tactics Useful in Educational R&D

DIRECT MAIL:

The cost of using direct mail may vary from a U.S. Postal Service 8¢ postal card multilithed in one color up to a four-color custom-printed and die-cut envelope on coated stock with a four-color brochure, two-color personalized letter, and two-color order card. The latter type of direct-mail package is used extensively by commercial suppliers in the education field; therefore, it can be assumed to be cost-effective when the mark-up on the product is sufficient to cover the cost-per-thousand.

Which type of direct mail will work best for educational R&D agencies? Here are some pointers (but not "laws"):

*The quality of the mailing list is more important than the quality of the mailing package.

*Cost per thousand includes postage; list rental; shipping and affixing labels; sorting, tying, and bundling (if bulk rate); and other specialized operations in addition to artwork, graphics, paste-up, printing or duplicating, folding, inserting, etc. Direct mail is not cheap! (There is even a cost in receiving and processing postage-paid responses.)

*Time of year affects direct mail response rates. Schools make buying decisions at a certain time of year, colleges at another time. These times can be determined. Holiday seasons hurt direct-mail response rates. Certain times will be propitious for certain offers, less so for others.

*Affixing stamps (even commemorative stamps) is not worth the extra cost, as a general rule. First-class stamps on return envelopes or

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order cards have occasionally made some difference, but they, too, are very costly.

*Hard-sell copy will probably fail with trainers of teachers and other college-level educators. A factual, even scholarly, approach seems better suited to the academic audience.

*It is unnecessary to personalize the message. Any college-educated person is likely to sense immediately the difference between a personal letter and a "personalized" direct-mail message.

*Different direct-mail audiences have been preconditioned to certain "trade practices." College faculty expect gratis "desk copies" if a text is adopted for class use; similarly they expect "free 10-day examination" of scholarly professional or technical books prior to purchase or return. School personnel expect gratis a teacher's desk copy before even considering whether or not to adopt a classroom text.

*A "routine" or reasonably-priced purchase item can be sold efficiently by direct mail--subscription renewal, film rental, single book, newsletter subscription. A "novel" or expensive purchase item cannot be sold efficiently by direct mail--multimedia teacher training package, computer-assisted instruction, complex administrator training package, set of toys and filmstrips and manuals to train parents at home.

*Direct mail can also be used simply to provoke awareness and interest--by mailing only a brochure or a self-mailer and suggesting some follow up action other than a direct-by-mail purchase. (See below.)

*Mailing lists made up of direct-mail buyers are more valuable than mailing lists of non-direct-mail buyers. The latter are more valuable

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than lists of paid-up members of an organization. Paid-up members are more valuable than former members (e.g., former subscribers to a journal). Inquiry names are of very little value. Compiled lists (principals, superintendents, physical education teachers, etc.) from directories may be productive if the lists are clean, up-to-date, and broken into meaningful categories.

*Thanks to the computer, it is possible to mail to only portions of a list demographically (purchasing power, locations, etc.).

*Any large list (10,000 or more names) should be tested first. In ordering a test sample, the renter should be certain to specify a spread over the total list--some from each region or state or whatever. Don't accept only the first batch in geo/alpha sequence--Alabama, Arkansas, etc. A common way of moving ahead is to start with 2,000 names and then test perhaps another 10,000 before going ahead with a full list (especially when mailing to teachers). Ample time must be allowed between tests to obtain and affix the next batch of labels.

*List tests must be conducted long before the prime mailing "season" so that the major mailing (if tests prove successful) is launched at the peak buying moment.

*More than one product can be sold in a single mailing--sometimes. Only by testing the direct-mail offer can the mailer learn if a multiple offer will work well. This type of testing must not be confused with list testing. Only one independent variable should be introduced at a time.

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*A simple way to verify whether or not the message is clear is to ask someone in the intended audience to react to the "selling" copy in draft form. A friendly critic out in the real world can offer keener criticism than someone inside the agency itself. And a sample of one is probably better than a sample of none.

*Re-order activity (if any) can be a significant indicator of product use.

*If products are offered on a free-examination ("open-account") basis, more orders will be obtained at lower cost. If payment with order is required, fewer orders will be received, but the high cost of collecting receivables and of bad-debt accounts is eliminated. Only large-volume direct-mail operations are geared to screening orders, collection systems, etc.

PRINTED MATTER:

Printed materials (other than direct mail which solicits an order by return mail) can be delivered by mail or by hand. By hand can mean any method imaginable--a hang-bag on the recipient's doorknob, a stack of copies in a convention booth, copies placed in faculty mail boxes, copies passed out to those entering a building or hall, copies delivered by agents one-to-one, etc. By mail, printed materials can be sent via bulk rate or as single copies via printed-matter rates. For bulk-rate, all the mailing-list selection suggestions mentioned earlier would apply.

Printed matter can be as simple as a single-sheet flyer that is mimeographed or multilithed or as elaborate as a four-color brochure or

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pamphlet printed on coated stock. Printed matter is highly flexible--the same piece can serve many purposes for many audiences, alone or in combination with other items. It can be used to answer mail inquiries, to satisfy visitors who want something to show colleagues, to enhance the agency's image with various publics, to help bring about adoptions, to impress funding sources, and so on.

But rarely will the producer know if a particular piece of printed matter was effective in achieving his specific objectives. The Wisconsin R&D Center spent $22,000 on a mailing effort that attracted participants to a conference of potential adopters of the Multi-Unit School (MUS)* concept: cost per conference attendee was estimated at $44 after a two-stage mailing effort. If the initial goal was to obtain conference participation at a cost no greater than, say, $50 per attendee, the printed matter sent by mail would be rated "successful" in this case. If the goal had been to spend only $25 per attendee, then the effort would be deemed less successful. Such specific goals are rarely established in educational R&D because the agency need not show a "profit" from the particular endeavor.

Tracking costs of printed matter is complicated further if the evaluation is to be carried out in terms of product usage. One of the MUS conference participants might have adopted the innovation, carried it home to his school district, and implemented it so fully that it affected favorably the education of 22,000 children over a longitudinal period. If so, the original funds for printed matter sent by mail would begin to look exceedingly cost-effective.

How "fancy" should printed matter be? There is no single answer.

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*See Appendix.

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A smudged and rumpled mimeod call for action may work in some situations. A very elaborate (even slick) and colorful brochure may prove effective elsewhere. In general, the printed materials should fit the image of the product and the agency as well as the needs of the audience. The headline and opening paragraph may well be more important than the overall physical appearance. Agency resources and/or quantity required are likely to dictate format.

A separate category of printed matter is the catalog (cf. Sears, Roebuck), one of the most commonly employed information (and sales) tactics used in education. Every educational publishing firm, every media firm, and some nonprofit agencies produce annual or semiannual catalogs that include prices. Some are accompanied by order forms and/or order envelopes. Most are distributed by mail to customer lists, but others are delivered by agents, handed out at convention booths, or made available to visitors to the organization itself.

Only in the case of mail-order giants (like Sears) is every catalog item tested for its dollar return against space cost. In the educational industry, every available product is likely to be listed, regardless of appeal, but items that have strong appeal or are new tend to receive considerably more space than items with weaker appeal. Nonprofit agency catalogs tend to treat all items equivalently.

A catalog's format may range from one to four colors, from a single sheet (unbound) to many pages handsomely bound, from small size to large, etc. Librarians tend to file all catalogs received or obtained. Purchasing departments in large school systems do the same. Curriculum

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coordinators are another group likely to maintain catalogs on file for information retrieval.

Since the commercial sector in education seems to continue to produce annual catalogs--and if CEDaR, Inc., should discontinue production of its product catalog (which is sold to users)--this tactic would obviously be one worthy of consideration by any R&D agency that has an extensive line of products for sale. However, on a cost-effectiveness basis, a single catalog covering all research-based products (like the ALERT Sourcebook* and its companion Directory, now sold by Docent Corporation) seems much more useful to practitioners. Similar information tools include the NICEM reference works, Bowker's lists of textbooks and supplementary books, etc.--all of which are sold to users with regular updating or revision.

School supply and college supply wholesalers also issue annual catalogs in which certain research-based innovations may eventually appear.

PUBLICATIONS:

This category includes books, handbooks, monographs, and reference sets. A book or monograph (subsidized or not) can be sold or given away to individuals, schools, colleges, libraries, parents, and the lay public. Books may be published by R&D agencies themselves or through professional organizations and/or commercial publishing firms. Such reference tools as Books in Print, Subject Guide to Books in Print, Publishers Trade List Annual, Literary Marketplace, Writer's Market, and other annuals make any extensive discussion of this topic superfluous.

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*See sample entries reproduced in Appendix.

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At least one R&D agency began by giving away handbooks for educators in unlimited quantities. Later, after arrangements for access to the Superintendent of Documents had been completed, all these public-domain handbooks became available through that source. All are still in print. Some have been reprinted by other agencies with the same text but with new covers.

To arrange such government publication, it is only necessary that the government-funded project order and pay for production of a given quantity of books, handbooks, or monographs at the Government Printing Office and, at the same time, fill out a form requesting that the Superintendent put the item on sale. The price to users will be quite reasonable, but no sales records can usually be obtained. Hence actual impact will be difficult to measure.

The information purveyed by books and other similar publications may lead to awareness and interest--and perhaps even adoption. However, even when a book or handbook is entirely devoted to a single research-based product (cf. The Minicourse: A Microteaching Approach to Teacher Education or A Guide to Securing and Installing the Parent/Child Toy-Lending Library), it will be exceedingly difficult for the sponsoring agency to state that any specific adoptions were effected by readers of that publication.

Two common arguments for books and monographs (as contrasted to catalogs or brochures) would be prestige and durability. A brochure is easily disposed of, but a publication tends to have a life proportionate to its perceived cost and "quality." Books and monographs tend to be respected by many educators, whereas "advertising" materials often tend

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to be scorned. But there remains the question as to what audience the sponsor wishes to reach; Americans, as a nation, do not read many books--and schoolteachers and administrators as a whole are reputedly not readers of R&D-type material.

So, again, the publication (as the vehicle of communication) must be shaped to the habits and inclinations of the audience on whom the R&D agency wishes to focus.

PERIODICALS:

Newsletters, journals, newspapers, and magazines make up this category. Journal articles focused on single research-based products can be written and some will, in due course, be published if they meet the criteria of the profession. More "popular" articles can be written for educational magazines (remember the publication of "Why Johnny Can't Read"!) or even for general magazines. They can be staff-written or ideas can be planted with free-lance writers. Education writers for newspapers occasionally will pick up news material; women's page writers or Sunday supplement writers can be enticed by lively feature ideas. Newsletters will sometimes print news items.

An R&D agency or a state or intermediate agency can produce its own periodical, such as CEDaR Report, Education Recaps (ETS), Urban Review (CUE), Bulletin (ECS), SMEAC Newsletter (ERIC), and others. It is very unlikely that such a periodical can break even if it mails copies only to paid subscribers. Parochial publications rarely prove profitable.

Placing a journal article is likely to offer several benefits: professional satisfaction for the author(s); visibility for the agency; and

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response from some professionals.

Arranging for publication of an article in a mass medium may offer other benefits: visibility for the agency; active responses from a potentially large audience, some of which will presumably lead toward possible adoptions*; inquiries from all sorts of diverse groups--seekers of employment, potential distributors, new funding sources, etc.

A newsletter item, if price and source are cited, can lead to both inquiries and adoptions (both of which can be summed) and to an unmeasurable amount of awareness (or even interest) among subscribers to and readers of the newsletter.

Any R&D agency or other educational organization that solicits news or feature stories in periodicals must be prepared to cope with the predictable response--anywhere from a handful of phone and mail inquiries (plus visitors) up to a deluge. Outcomes at either end of the scale entail a cost which can be computed. And the agency's message(s) to the inquiries (or orders) must be planned and targeted if information is to be disseminated usefully and economically. First-class mail can be very expensive!

Some periodicals sell reprints or will grant reprint rights. An education agency can thus obtain inexpensive handout materials if the original article was predominantly favorable. (A proper copyright notice and/or publication credit invariably appears on such a reprint.)

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*A Woman's Day feature article (on the Parent/Child Toy-Lending Library) written by a free-lance writer caused an R&D agency to respond to more than 3,000 individual pieces of mail. The agency still does not know if any of materials it mailed to those who wrote to the addresses cited in the magazine actually began to use the product, in full or in part.

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DISPLAYS:

This category may include everything from a multimedia traveling exhibit to a simple black-and-white poster. Costs will vary accordingly. Again the key decision is: who is to be reached with what message for what reason?

The major documented experiment with a traveling R&D product exhibit has been well documented by Sarbaugh (1973). Twenty-four percent of the visitors filled out forms asking for more information, but it is quite unclear whether the agencies to whom these requests were later sent were either able or willing to service these requests. (The exhibit sponsor had not provided them funds for this follow-up.) Mean viewing time for each of the modular multimedia units was four minutes. Sarbaugh's scale probed for such outcomes as "taken action" or "think about adopting"; his principal finding seemed to be that potential adopters, who use no single source of message to gain their information, viewed the accompanying "consulting session" (specialists were on hand for discussion groups) as having a strong impact on their subsequent behavior. His findings thus raise serious questions as to the role played by the exhibits per se in providing information, especially in view of their obviously high production, servicing, and shipping costs.

Convention exhibits--some equally as expensive--continue to be a significant factor in the budgets of the commercial sector. However, the costs of convention attendance* must be partitioned to cover personnel, travel, housing, entertainment, printed materials, samples, etc.--in addition to the display itself and the space rental. Clearly few commercial

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*See cost warning under "Field Staff" discussion in a later section.

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firms simply rent space and leave their displays unattended; the information value would be minuscule if they did.

Posters as an information medium for research-based innovations seem almost valueless, despite their low cost. A billboard or a poster demands a very succinct, quickly grasped message--a qualification that just about eliminates educational innovations. Then even if the message were well presented, can information be well transmitted via bulletin boards in school buildings? Key information on bulletin boards is presented commonly via mimeod notices; why should an R&D agency seek a "fancier" channel? A simply printed (perhaps oversize) list of workshop dates and places, a bulletin on forthcoming training institutes, a calendar of events--these are the uses for which posters seem useful and cost-effective.*

It also seems important to determine, before producing a poster, who will be expected to affix it to what surface for what audience. Even then the question will remain as to how to verify that some percentage of poster viewers acquired the information intended for their eyes.

ELECTRONIC MEDIA:

This category is so broad--and, in some areas, so new--that this brief review is certain to be totally inadequate. Consider the Telecopier, which already delivers information instantaneously across the nation; it can transmit anything written, printed, drawn, or photographed. 50,000 or more businessmen now use it, but probably no educator yet does. Consider ERIC, which some educational researchers use fairly extensively and some practitioners have never tried once. Consider closed-circuit ETV

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*Posters seem a reasonably effective mode of recruitment. For example, $785 spent for posters produced eligible applicants for an Experience-Based Career Education program at $36 each contrasted to $157 per applicant for radio spots.

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which is used extensively in certain school districts and not at all in others.

Perhaps the best overall view of information tactics that employ such modern media is one that recognizes that the recipient must have access to and be comfortable with the medium. A film projector with a burned-out bulb won't provide any information at all--until a new bulb is found and installed.

Since major studies of ERIC and other educational information systems have been conducted and reported, this analysis will simply bypass that topic except to suggest:

*There is little evidence of teachers or even school administrators making extensive use of either the microfiche or hard copies.

*Much of the information accessible through ERIC is presented in a language and a format that does not correlate easily with search behavior of school personnel.

*The quantity of school-(practitioner-)related information that may exist in ERIC is probably overwhelmed by information that seems more remote from classroom needs.

Educational television (cf. "Sesame Street," "Electric Company") has proved a powerful medium, but not for disseminating information about R&D products. One agency experimented with two underfinanced educational TV experiments (1967-68), only to discover that few (1-2%) in the potential intended viewing audience were watching the programs. When a handbook was offered free to viewers, very few requests were received. Even free loan of some of the kinescopes (made from the original taped programs) did

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little to increase the spread of information about R&D activities in education. (Another filmed byproduct, from a CBS-TV program on the DISTAR reading program, has been used extensively in workshops to generate interest in and adoption of that R&D product.)

Local TV stations--and occasionally network stations--will cover education events if they are (a) newsworthy and (b) easy to film and record fairly rapidly. However, the general public would not be expected to sit through a TV explanation of a research-based product that would be sufficiently detailed to enable some educators within that viewing audience to acquire enough information on which to base an adoption decision.

Radio call-in programming has not been documented for educational R&D. There is no reason to expect that it would be superior to the present uses of closed-circuit ETV.

Programming via satellite has been tested in a few areas. No known instances of dissemination of R&D information via this medium have yet come to light, but sponsors of the Applications Technology Satellite plan to train some teachers in career education and reading during the summer of 1974.

Telephone hot-lines have been tried in some specialized situations. Telephone conference calls are even more frequent. No documented outcomes have been reported.

One of the most common information media is filmstrips with accompanying cassette audiotapes--or slide sets with tapes. A well-documented study on development and impact of such filmstrips and tapes for R&D information

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purposes can be found in a case study on the "Elementary Science Information Unit" (ERIC ED-043-515). Innumerable research-based products use this medium as an interest-stimulator, introduction to users, or advertising tactic. In each case the product itself could provide almost as full information to users without the filmstrip-tape materials but the extra expense is justified as being useful to generate interest, provide an "active" learning dimension, or supplement what is reported in print. Sometimes the AV component is provided solely as a promotional technique to recruit a group of preservice or inservice personnel for the decision-making or training activities of the product itself.

Audiotapes alone have been used to provide information--replicas of speeches, recordings of conferences, special-interest messages, etc. It is generally assumed that cassettes can be heard on site anywhere in the U.S. where education is occurring. And cassettes are relatively inexpensive and easy to distribute by mail.

Film (16mm sound) is one of the key information media in education. Nearly every building that houses education has--or has access to--a film projector, and the same films can be played through film loops on TV channels. Film is expensive to produce--from $500 to $3,000 per minute. But film is relatively easy to transport by car or bus or mail--from place to place; also its informational impact has been well researched and reported.

Many R&D agencies have produced informational or interest-stimulator films that have been shown at conventions, professional meetings, teacher and administrator workshops, PTA meetings, community service meetings,

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and so on. Few if any studies have attempted to track the actions of viewers after they have left behind their opinions of the event itself, but the mystique of film as an informational technique has not diminished nor has the quality and quantity of films made explicitly for informational purposes. Since these films are customarily shown free, their value to the viewing audience can be estimated only through survey and interview techniques--and even this type of feedback is rarely obtained by R&D or other education agencies after the product has been developed and released.

WORKSHOPS:

One of the most widely used tactics, this category encompasses everything from the building-level faculty meeting on up to the traveling seminar. Richland (1965) reported on the SDC traveling seminar and a subsequent follow-up conference intended to facilitate dissemination of educational innovations (ERIC ED-026-741). Five AACTE workshops are reported (in ERIC ED-048-134) but they were "supplemented" by a media package* to help disseminate knowledge and understanding of the workshop's focus on elementary teacher-training models. Workshop participant comments are summarized as having "extracted much information."

Longitudinal evaluation of what participants do as a result of attending lectures, seminars, and workshops seem to be astonishingly scarce.

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*The report cites: a set of 35mm slides with audiotape and script; a 16mm black-and-white 30-minute film with 16pp. text of a speech; a copy of speech plus an audiotape; a 45-minute videotape plus a 95pp. printed speech; 16 transparencies and a copy of a speech; behavioral objectives for each component; and project papers printed in book form.

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But if participants pay their own travel and per diem expenses, and if registration fees cover any out-of-pocket expenses for the presenters, the workshop tactic can be viewed as a cost-effective way of stimulating awareness and interest.

By any account, in view of annual educator meetings as the national, regional, state, and local levels, this information tactic seems to be frequently used and perhaps not grossly inferior to mass media in low cost per impression. Nevertheless, a communicator should try to estimate the time and other resources expended in order to arrange for sponsorship of and/or participation in such informational workshops and should try to gauge, at least informally, what impact the information thus provided may have on attendees' later behavior. Educators have a seemingly insatiable demand for free information, possibly because the seminar format so closely approximates that of the formal classroom

COMPUTERS:

Perhaps the computer should have been categorized with the other electronic media cited earlier. But the computer's cost-effectiveness in disseminating educational R&D information has been scarcely tapped other than in computerized ERIC searches.

As computer terminals become more widely available in educational settings, a cost-effective means of providing practitioners with selected R&D information, on demand, will become feasible. The consumer's profile is already stored on many a mailing-list computer tape--where he works, when and what he buys, what type of learners he works with, his purchasing

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power, etc. Certainly these data could be interfaced with what he wants to know about research or research-based products. The major question remains: will the educational information-seeker be willing to pay for such rational information?

ADVERTISING:

Probably a nonprofit R&D agency will avoid any advertising (other than "help wanted"), though institutional or public service advertising might not be inappropriate in certain circumstances. One R&D organization did try a $650 ad in Grade Teacher which produced 759 requests for additional information, but no data have been provided to show how many actual product adoptions occurred thereafter. Another agency is experimenting with a $275 advertisement in a journal, with a hidden mail-order offer buried in otherwise "announcement-type" informational copy, but no results will be available until Fall 1974. Little advertising for research-based products has appeared, but most of that has been placed by educational publishing firms to announce new products acquired from nonprofit R&D agencies under federal RFP procedures.

Somehow the "image" of a nonprofit R&D agency would seem to be tarnished if it engaged in any really forceful advertising campaign*; further, the nature of the complex R&D products thus far produced suggests that space advertising would not be likely to be found cost-effective, even if it someday became psychologically acceptable to the educational profession. Any strong performance claim on behalf of an educational product

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*For this reason, any discussion of cost per thousand readers, scheduling, preferred position, etc. is purposely omitted here.

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tends to be questioned by university-based professionals, since all too many claims by educational publishers have in the past seemed improbable.

PUBLICITY:

This tactic goes hand-in-hand with many mentioned earlier, if only as a precipitating device. A public information officer must have contacts (or at least a card file in which to locate contacts) that will enable him/her to activate one or more of the preceding tactics. A clever idea for a photographic feature pops up--what free-lance photographer nearby is looking for an assignment? An educational magazine asks for feature-story ideas--what product or activity fits the publication's interest? A publicity release seems called for--what's a lively lead, when to release, how many to mail? An unusual event is about to occur--which columnist might run a paragraph on it and do educators read that column? A nationally prominent legislator is to visit the agency--would local TV stations find that newsworthy? And so on.

The role of the publicist is well documented; no review is needed here. Most of what happens in educational R&D lacks news value, but often feature material can be made interesting to writers, photographers, editors, and other media gatekeepers.

Here, again, costs are difficult to track. Perhaps public relations must remain a catch-all category* covering publicity, community relations, agency goodwill, entertainment for visitors, speechwriting, annual reports, and so on. But a total budget for personnel and resources (including communications) is required in order to assess fairly the "value" of the total "publicity" effort.

*See Philip Lesley (ed.), Public Relations Handbook, 3d ed., Prentice-Hall, Englewood Cliffs, N.J. (1967).

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Summary

From the behavioral sciences, R&D communicators can gain many useful indicators--for example, individual consumer dissonance can be reduced by adequate information (Holloway, et al., 1970) and individual readers recall advertising selectively (Starch, 1966). But in the R&D field they can quickly learn at first hand that many messages aimed at organizational decision-makers are inept or inappropriate--or both.

So for each information tactic considered, the communicator should ask:

> Is the goal of the information: to maintain institutional visibility; to increase the user organization's knowledge; to change attitudes of groups within educational organizations; to complete single sales or build repeat sales; or to change immediate and/or subsequent behavior of the recipient organization?

Once that question has been asked--against a framework of "What do we know about information tactics in general?" and "What resources are now available?"--the task of selecting a set of information tactics will prove much less mystifying and even offer a promise of some targeting success.

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DEMONSTRATION TACTICS

An innovation may require more than a "telling" tactic to arouse interest among intended users. "Showing" and even trial usage under controlled conditions may lead to adoption and eventual full-scale utilization. Three types of demonstrations are discussed: at the user's own site, at a central site to which visitors are invited, and at invitational conferences/workshops. Several case histories are cited, along with lessons learned from those experimental situations. Further study of the tactic is also recommended.

Demonstration falls at about the "interest arousal" segment of the educational change continuum, though it could easily be placed further along toward the "hard sell" segment if the demonstration itself were carried out by a "pitchman" whose goal was to close a sale right on the spot. However, commonly this tactic is used as a hands-on experience just prior to the trial or adoption stage of decision-making, or as part of the trial/adoption process itself.

Selecting the target audience for a demonstration is closely allied to selecting those to whom direct mail or catalogs will be distributed. However, demonstration can prove more effective as a change tactic if only because information sent to schools is frequently not forwarded to the personnel most interested or most concerned (Donley et al., 1965). Moreover, most educational innovations require group decision-making, so it is rarely productive to focus only on an individual teacher or administrator (by mail or by other means). School personnel, being almost constantly busy, have little time to analyze, evaluate, or modify innovations; their decisions tend to be made on impulse and feeling rather than on a

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rational basis (Johnson, 1969). These factors must be kept in mind in deciding how to preselect attendees for a planned demonstration. If only one person is to attend from a school district, the district superintendent is likely to make the selection--but will that single attendee be the most malleable from the viewpoint of the demonstrator, or the most likely to be an opinion leader when returning to the district, or simply someone who had no pressing assignment at the moment and could be freed without disruption on the firing line?

Characterisitcs of the innovation must be matched with characteristics of the adopting unit (Sikorski & Hutchins, in press) for maximum effectiveness.* Hence, the planner of a demonstration must recognize that if he has a new "product class" he will be placing a heavy burden on the information-processing capacities of the intended user (Howard & Sheth, 1969). When the product/process to be demonstrated is the first of its kind, it will be especially difficult to demonstrate because the potential adopter has no well-defined criteria to use in making a judgment and is likely to perceive the change involved as one entailing high risk. To offset this obviously disadvantageous situation, the demonstrator has certain assets he may be able to summon. First, a problem-solver is likely to respond favorably to someone perceived as a competent source. Second, a social-minded person in the audience is likely to respond to one deemed as attractive. Third, the product/process may be depicted expressively and not simply as intrinsically rewarding, thus capitalizing on its symbolic attributes. Finally, "newness" itself is often an adoption/purchase stimulus if the

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*For example, behavioristic, tightly-programmed Minicourse training of teachers is unacceptable to school-district philosophy in certain localities.

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product/process is not displacing something already in use.

Drawing upon the marketing domain, the demonstrator in education can use testimonials from a normative reference group and/or a comparative reference group in order to overcome inertia, fear of disapproval, and other well-documented opposing forces (Engel et al., 1967). But selection of participants at a demonstration is still probably the crucial variable*: the goal should be to convert those who are uncommitted or already leaning toward change, rather than dissipating effort on those dedicated to the status quo (Robertson, 1971). Creating "needs" is perhaps too difficult a task for the educational demonstrator; he is likely to function more successfully if he already has an image of trust or progressiveness vis-à-vis the audience at the demonstration. High credibility is a composite of competence, power, trust, and likability. But high credibility alone won't lead to change unless some client predisposition already exists. Target segmentation** teaches us that audience homogeneity can enhance the visual and social display that characterize educational demonstrations of infrequently adopted, high-cost products/processes. Screening out, in advance, those for whom the timing is wrong (e.g., their current funds are already committed elsewhere) or who are negatively predisposed should be a sine qua non for the successful demonstrator. Some major city school districts, for example, require that all items purchased by schools be on a list of permissible purchases; to demonstrate a product not yet on the approved list will simply be counterproductive, unless the purpose of the demonstration is to obtain such a listing.

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*Another key variable is the skill of the demonstrator; a third is utility of the innovation itself.

**The term applies to clustering and classifying those who seem similar on one or more relevant criteria (e.g., able to use and likely to use product/process).

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If the demonstration stage is viewed as one aimed at awareness, the tactic involves explanation and description--both of which can be carried out by information tactics (discussed earlier). If the audience has already been screened down to a group that has expressed interest, then market segmentation has already begun and more targeted tactics such as hands-on demonstration can be employed. It is important to recognize that some adopters remain at one stage longer than others, so the more homogeneous the audience, the more clarity on critical attributes can be obtained (Zaltman, 1965, chapter 3). In sum, if the demonstrator "knows" the motivations and social perceptions of the audience, it will be easier to make the innovation being demonstrated appear compatible* with the potential users' cultural, social, and socio-psychological attributes (Thio, 1971) by emphasizing only certain advantages and benefits.

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*"Product differentiation" suggests that users adopt the same product/process to satisfy different needs.

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Three Types of Demonstration Useful in Educational R&D

USER SITE DEMONSTRATION:

A commercial vendor or a nonprofit development agency, desirous of developing an adoption of new curricular materials in a major school district, will sometimes, at little or no expense to the user system, supply sufficient classroom materials for a trial demonstration of the new product on a one-month up to a school-year basis. The purpose is to assure collection of intra-system evaluation data and to encourage intra-system decision-makers to agree to more extensive installation and utilization in the near future.

Such demonstrations have been fairly common in the form of pilot tests within large school systems (principally urban) that insist on trial of actual products/processes before accepting them on approved lists for purchase by schools within the system. Commonly the vendor must supply all needed materials for this tryout; the purpose is to establish that the innovation will perform as claimed under operational conditions. It is possible that no research evidence exists on this type of demonstration; for even though the individual agencies may amass their data across sites, commercial organizations will be unlikely to publish the outcomes in any event.

Nonprofit R&D agencies may use field-test sites as a demonstration seed-bed in hopes of seeing a product/process spread throughout the user system at a later point. However, if a field-test site takes on a demonstration role, the test data are likely to be suspect and/or the test design

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may be contaminated by the presence of observers and by the need for explanation rather than actual use under "normal" conditions.

A single commercial installation ("piloting") within a large school district may be planned as an inducement to encourage later purchase for other school sites within the district. The cost of the experimental materials (if not paid for by the user system) can always be built into the overall cost of the product. For the nonprofit agency this option is much less likely, since nonprofit demonstration activities have, to date, been funded principally by the federal government and have tended to be placed at sites accessible not just to a single user system but to all comers.

The objective of this demonstration tactic is probably eventual adoption by that single user system for all or most of its classrooms. The physical act of demonstration is intended to show that the product/process is practical for and applicable to those who view it--for later use in their own classrooms. Though such demonstrations are, by nature, quite parochial, they seem well suited to complex innovations that require careful longitudinal evaluation and are aimed at penetrating an entire school system.

However, a cautionary note is required for this type of demonstration and the others described below. In terms of what little is known or documented, demonstration centers alone (without follow-up procedures) have tended to be primarily an awareness device, with as little as 10% of the audience influenced toward major change and only 2% totally adopting the demonstrated program (Lapan, 1971). Viewers are inclined to

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adopt parts, rather than all, of the products/process they saw demonstrated, but we have found no longitudinal studies that have looked at the subsequent behavior of those who did not act rather promptly after viewing a demonstration.

DEMONSTRATION CENTERS:

This type of demonstration has been well documented for certain major research-based innovations (for example, see Hutchins & Dunning, 1973; SWRL, 1972), including some beginnings of cost benefit analyses. Individually Prescribed Instruction (IPI), the LRDC/RBS model that successfully employed an experimental school / development-demonstration school / pilot school / demonstration school concept, is a classic example of a long-range effort to make this tactic the key to diffusion of IPI (Jung, 1972). IPI mathematics (see Appendix), for example, was developed originally at an R&D center which used a single elementary school nearby for its preliminary tryout. Then another school was selected for demonstration/development purposes in the same school district, at the same time serving a training function for staff in other demonstration schools. Four other demonstration schools followed, all in a fairly compact three-state area. Several thousand visitors were hosted in five demonstration schools during one year, resulting in many schools implementing IPI outside the demonstration network. However, no data are yet available on the cost per visitor or on what percentage of those who viewed demonstrations actually adopted the IPI materials or sought training in their utilization.

In a one-year project SWRL operated Information Resource Centers (IRCs) to demonstrate its Kindergarten Program (see Appendix) to visitors at sites

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located in five major school districts. Four (or, in one district, three) schools were selected as IRC demonstration schools in each of the five participating school districts. Kindergarten Program (KP) orientation briefings were available for visitors, who were then able to meet with teachers and administrators and to observe KP in use. Visitors also received handout materials (pamphlet, information sheet, etc.) to take home after their visits. Audiovisual aids (films, filmstrips) described the various components of the KP.

Predictably, September and June showed very few visitors, but the volume built progressively during the period from October through May. Visitor objectives, as recorded on comment sheets, showed that "general information" ran far ahead of the second and third items named--"evaluate KP for use" and "observe reading instruction in kindergarten"--the tallies being 549, 310, and 246 respectively. "Classroom observation" was the specific activity that visitors found most valuable, with "films" ranked second and "coordinator's orientation" ranked third.

Some 1,500 persons visited the IRCs, of whom nearly 1,400 represented school districts whereas about 130 came from colleges, publishing firms, research organizations, etc. The estimated cost per visitor was $120, but "only a small fraction of visits can be directly tied to specific sales" (SWRL, 1972, p. 34). Given the present state of the art, the authors conclude that instructional product demonstration in use is still "prohibitively expensive." For "even with all imaginable cost trimming and volume incrementing, cost-per-visitor would still be high" (p. 33).

Another major demonstration effort for Minicourses (see Appendix),

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carried out in the same school year (1971-72), is reported in Hutchins & Dunning (1973), though no cost figures are shown. Approximately 5,000 visitors to demonstration sites viewed teachers undergoing inservice training with one or more of five Minicourses that are built upon microteaching and videotape feedback. (Estimated cost per visitor was $60.) The project report indicates that estimates derived from a random sample of demonstration site visitors would suggest that half the visitors would use a Minicourse if it could be borrowed from an intermediate agency and that about 10% of the visitors had already secured and used a Minicourse at the point when the sample was studied (about three-fourths of the way through the contract period). Another 15% indicated that there was an "excellent" chance they would do so in the following school year. Demonstration site directors estimated that 17,000 teachers had used or would use a Minicourse as a result of the demonstration effort.

The major sites were established by various agencies (a college, a state education agnecy, an urban county school system, etc.) in key metropolitan areas. Other floating sites were opened in various geographical areas and then moved on to other regions after a two-month period of operation. A single coordinator was responsible for each of the demonstration activities (up to five sites per demonstration project, operating simultaneously); the overall project report concludes that the skills of the person conducting demonstrations are critical to success. "Personal confidence... enthusiasm...talent as a public speaker...knowledge of formal and informal professional communication networks...understanding of the function of a demonstration"--these words emerge clarion-like from the report's pages.

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The authors assert that an aggressive marketing approach is called for if the coordinator is to succeed in reaching out to entice visitors to learn about the innovation.

Another finding: "Demonstrations (of this kind) are probably more effective in creating awareness and a general 'feeling' for the quality of an innovation than they are in imparting specific information about costs and implementation requirements" (pp. 35-36). Observation: "Direct mail is a useful method for alerting people to demonstration sites."

To repeat, demonstrations are expensive on a cost-per-visitor basis. They require much lead time for planning. And each project coordinator and each site manager must possess (or be provided with) an array of marketing, advertising, promotional, and publicity skills.

CONFERENCES:

If the conference/workshop tactic is used simply as a one-way lecture presentation, then it would be categorized under the earlier "Information" category. If it is used as a "selling" tactic, with participation and interaction throughout, then it can be considered as another "Demonstration" tactic. According to Klausmeier et al. (1972), the developers of the Multiunit School (MUS)* have successfully used the one-day awareness conference technique (with participants recruited via direct-mail solicitation). They recruited 386 conference participants by mail. These participants (in five geographic areas) provided 204 post-conference questionnaire responses, with 49 indicating that they had adopted the product in 60 schools. Thirty-four non-adopters, asked about future plans, indicated

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*See Appendix.

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that they would implement MUS at a later date. The study indicates a cost per conference attendee of $57.71 and suggests that these costs are "quite reasonable" (p. 19).

Another conference/workshop tactic was tried for the ALERT system when it was still in early field-test form. Six workshops were scheduled in varied settings under diverse local sponsors, with the local sponsor handling the mailing of invitations and all local arrangements. Sponsors included an inner-city college, a professional organization, a university, a state teacher organization, a university continuing education division, and an urban graduate teacher-training institution. The minimum head count for the six sites ranged from 29 (in a snow storm) to more than 80; the project director estimated that 400 mailed invitations would be required to recruit 100 conference attendees. Approximate average cost to run the demonstration, prorated on a per attendee basis, assuming cross-country travel by two demonstrators, was estimated at $5. Only 8% of those who attended the hands-on demonstrations indicated on questionnaires filled out at the end of the meetings that they intended to purchase, suggesting a cost per "sale" of approximately $100 for a product that, in its final form, is sold commercially* at $9.95 (Rosenau, 1971). The project had no way of estimating the impact of its demonstration efforts if (a) the product had been ready for use at the time it was demonstrated and (b) attendees could have been provided with precise ordering information.

Additional types of workshops might include summer NDEA training institutes, NASE drive-in and fly-in conferences, and publisher-sponsored workshops at which new curricular products are demonstrated to invited guests.

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*Appendix entries in this paper were duplicated from the published ALERT Sourcebook.

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Essentially, what the interactive conference/workshop tactic provides is a technique for conveying information and creating awareness/arousal for a large group of preselected participants in a format that permits adjustments to the region or locality, the fluctuations of weather, variations in time scheduling, and a cost/benefit ratio that can be as low or as high as the sponsor wishes. Further, the conference/workshop tactic fits well into accepted school practice, making recruitment of participants relatively easy if careful preplanning is carried out.

Packaged conference/workshops may be made possible by use of film, phones, educational television, video cassettes, or other technological media. Films offer a one-way "workshop" medium--especially those created to demonstrate an innovation in use--since films can be transported inexpensively from place to place. Cable television offers a powerful demonstration mode, and perhaps the satellite experiments of the 1970's will signal another technological alternative. All these tactics seem to offer a low cost per demonstration that seems ideal for interest-arousal but lacking in any hands-on experience with the innovation itself.

One as-yet untried tactic would be some form of packaged, transportable simulation experience that would enable users to experience a low-risk, low-cost tryout of at least part of a large, complex innovation. Such a tactic would seem initially expensive if used by only a limited number of participants, but it might become cost-effective if widely utilized over time.

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Summary

Personal demonstration is a tactic for which we can locate some specific case histories and some realistic cost parameters. As a tactic, it can be used all across the decision-making spectrum, through it seems to be almost invariably preceded by some form of information dissemination and quite often followed by some form of interpersonal closure. Additional studies will be required to document the extent of utilization that actually occurs as a direct outcome of school personnel attending and participating in a demonstration activity at which an innovation is shown and discussed interactively.

Many national professional organizations (e.g., NCSS, ASCD) create opportunities for convention registrants to visit local schools where innovative programs are in operation. Some formal study of the impact of these activities on adoption/rejection decisions seems urgently needed, so that the "cost" of those visits can be compared to the larger studies cited here. Similarly it would be useful to examine the "selling" potential of the commercial salesman's tactic of showing prospects his employer's latest innovation in use in a nearby setting.

"Demonstration" seems to be occurring, in short, even without federal funding to R&D agencies or to state education agencies. But the principal demonstration effort in 1974-75 will clearly be the ESEA Title III (Section 306) developer/demonstrator, state facilitator, and adopter/replicator projects to be launched in July, since millions of dollars in federal funds are being committed to this nationwide experiment.

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FIELD AGENTS

> Though the role of the nonprofit educational field agent is a relatively new one, that of commercial salespersonnel has a long, recognized history. The two roles, though superficially similar, have several major differences, as outlined here. The field-agent tactic comes, obviously, at the trial/adoption/nurture stage of the diffusion process and is characterized by maximum interpersonal behavior and flexibility. Needless to say, the field agent uses all the previously discussed tactics to some degree, depending on perception and analysis of specific product/user configurations.

In any discussion of field representatives, whether nonprofit educational "extension" agents or commercial salesmen, the same series of questions probably apply in determining the range of activities of field personnel.

A. Utility to the User

Who is the user?

What does he want/need?

Has he asked for help?

Has he used anything similar before?

How does he usually acquire new products/processes?

How much trouble will he meet in buying/renting a solution being offered to him?

Will he find the solution worth his effort?

How do we know?

B. Objectives of the Effort

What are we trying to do?

Is the product/process we're promoting well developed, well packaged, valid, reliable, economical, useful?

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To whom? How do we know?

What would happen if it weren't even mentioned to the user?

Is it similar to other products/processes being offered to potential users?

What key questions must be answered before the user system can adopt the new item?

Can someone inside/outside the user system provide technical help with implementation?

Is its use vital to the user organization's survival?

Are other products/processes of the same type likely to be ready for users in the next few years?

C. Costs to Do the Job

What real costs (time, personnel, out-of-pocket expenses) will be required to assure use? (By what percentage of potential beneficiaries in the user system?)

What costs (real or hidden) will the user incur?

What proportion of the user organization's total effort must be devoted to assuring use? (Is that expenditure of effort justifiable in terms of other priorities?)

Can any of the anticipated costs (rental, purchase, replication, distribution, evaluation, etc.) be eliminated or reduced?

What will it "cost" the user organization (in prestige, potential funding, momentum, morale, etc.) if the idea fails totally?

What will it "cost" the educational community if the innovation does not perform properly?

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If the best modes of use seem prohibitively expensive, are there shortcuts or revisions or unbundling possibilities that might surmount such obstacles?

If information is disseminated to potential users, what are the consequences of arousing interest?

Essentially, every field agent must be concerned with such dichotomies as:

*characteristics of a product/process vs. what users want it to be

*price vs. ability to pay

*convenience of adopting vs. accessibility of other alternatives

*communicability of attractiveness vs. receptivity to such communications

A field agent must know the dimensions of the "market" within which he/she is operating. For example, the Association of American Publishers projected for 1971 a $900,000,000 market for educational materials, broken down roughly as follows:

$500 million - elementary and high schools

25 million - standardized tests

380 million - colleges

Average per pupil expenditures for 1973, by category, were estimated at:

$ 7 - elementary

11 - secondary

40 - higher education

Per pupil averages come to $8 for text materials and $21.50 for non-text materials. What is more significant to the private sector are such data as:

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20% of school districts enroll 80% of all pupils

50% of college enrollment is in only 10 states

Districts enrolling between 2,500 and 12,000 pupils are usually the most innovative (Knowledge Venture Group, 1973).

Rogers & Shoemaker (1971) offer evidence on change-agent success:

*success is positively related to extent of change-agent effort (p. 233).

*success if positively related to client orientation, rather than to change-agency orientation (p. 237).

*success is positively related to the degree to which the project proves compatible with client needs (p. 238).

(They also recommend selection of change agents who resemble clients, so far as possible.)

*success is positively related to the extent the change agent works through opinion leaders (p. 243).

*success is positively related to change-agent credibility in client's eyes (p. 245).

*success is positively related to the change agent's efforts to increase clients' ability to evaluate innovations (p. 247).

The major advantage of field agentry as a tactic is that field personnel can segment the market and differentiate the product on a <u>daily</u> basis. Agents can work in depth in those segments they are able to penetrate and can meet multiple demand schedules; at the same time they can work for a horizontal share of a broad generalized market. None of the other tactics offers this degree of flexibility. Field agents also can employ backward segmentation when they note the ways members of user groups resemble each other.

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Agents can feed back to their employers local "style" fads and trends to guide future design plans, whereas the information tactics cannot. An agent can provide service and adjustment on the spot, can report on competitors' position and behavior, can report product deficiencies and strengths, can report on user adoption behavior, can report on state regulations and local school-board matters, and can make suggestions on product packaging, personal "selling" techniques, etc., based on facts obtained in field situations. Finally, due to the interpersonal role, the agent can pay attention to the attitudes, values, and behavior of individuals within the school organization and work to overcome the difficulties faced by decision makers when they struggle to "disconfirm" current practices (Johnson, 1969).

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FIELD AGENTS (non-advocacy):

This non-commercial tactic involves a role that is by no means clear. Agents probably must be subsidized if they are to serve as process helpers and resource linkers, unless the role can be developed sufficiently to incorporate the notion of paid consultants to user systems. "Extension agents" have been viewed as providing technical assistance, helping those most in need of change, delivering impartial information to those by whom it is needed (from such information systems as ERIC, EPIE, ALERT, SRIS, DATRIX, etc.), and carrying out social marketing* tasks. They tend to work with a reciprocal public (those user systems interested in the organization represented by the agent, when that organization is also interested in those user systems), rather than with "sought" or "unwelcome" publics (Kotler, 1975).

The table below suggests some of the "publics" that may be served by field agents representing either R&D organizations or public education agencies, with an approximation of relative emphasis of agent time and effort allocations.

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*Social marketers offer no single panacea, but rather suggest or create a variety of products and services that advance social objectives (Kotler & Zaltman, 1971).

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Principal Contacts with	R&D Agency	SEA or Intermediate Agency
Public schools	***	***
Private schools	**	**
State education agency	***	***
Universities	**	**
Intermediate agencies	***	***
Preschools	*	**
Teacher organizations	**	**
Administrator organizations	**	**
Professional associations	**	**
Community colleges	*	**
Church and youth groups	*	*
Proprietary schools	*	*
Teacher-training institutions	***	**
Educational media	**	**
Mass media	*	*
Local media	*	**
General public	**	**
PTA	*	*
Government agencies	***	***
Legislative	*	**
Non-university R&D community	**	*
Local school boards	*	**

*** Serves Primarily

** Serves Secondarily

* Serves Only On Demand

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The nonprofit agent role will depend on whether the employer organization intends to serve clients highly responsively, casually, or unresponsively. In the former instance, the role demands keen interest in learning needs, preferences, degree of satisfaction achieved, etc.; here the agent will systematically collect information, encouraging inquiries, complaints, suggestions, and opinions and adjusting behavior accordingly (Kotler, 1975).

One effective transportable training program has been developed to cover one part of this type of agent role: The Educational Information Consultant (EIC). The self-contained training, already available in one format from the University of California's Extension Division, covers response functions only (not outreach). A linking agent can learn to transfer knowledge from the resource (researchers and developers) to users (practitioners) through skills of negotiation, retrieval, transformation, communication, and evaluation (Banathy, et al., 1972).

Possibly this packaged effort is as far as the nonprofit sector is likely to go in the foreseeable future, since such agencies rarely can obtain funds to study their publics formally and funding sources have historically seemed uninterested in the problems of target marketing. Recent work in this area has shown promise, but no large-scale experiments in naturalistic settings have been conducted to date.

A three-state pilot program using field agents for educational extension work has been fully documented by Sieber et al. (1972), Mick et al. (1973), and others. Sieber characterized the effort as a "highly successful tryout" that "needs improvement." One-third of the clients found the information they obtained from agents "very useful"; almost twice as many respondents felt that personal assistance had been useful. The Sieber

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analysis suggests that clients may have endorsed the service because it was free and they did not wish to see it curtailed. The evaluators also felt that field agents should be located in intermediate agencies (regular resource centers, intermediate education districts, county offices, or large district offices), with local consultants being available to help the agents. One agent would evidently be needed for 300 potential clients. Important role aspects seemed to be: status as an outsider; a repertoire of change-agent skills; ability to follow up; and monitoring by a federal agency. The person filling the role should ideally:

*be non-authoritarian

*be patient

*be tolerant of delay

*have a low need for ego-aggrandizement

*like meeting people

*think and speak clearly

*not act as a missionary for a particular practice

*be adaptable

*be orderly

The study also recommends a team of agents--one with administrative background and one with teaching background--plus support services. Overall, the nonprofit field agent seems to occupy a quite uncertain role when contrasted to the commercial salesperson (see below).

Closely allied to the extension agents, though recruited differently and left mainly to their own devices at the conclusion of preliminary training, are teacher associates (e.g., Social Science Education Consortium) or social studies field agents (Marker & Mehlinger, 1972). According to

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SSEC, the quality and effectiveness of teacher associates has been "high," with a "substantial and demonstrable impact on their school districts and, in many cases, on broader constituencies."*

The social studies field agents were recruited specifically into a one-year special training program at Indiana University; they then returned to their local districts to disseminate information about new materials and to try to get others to begin using those materials. The study suggests that the field agents "developed a trend, an atmosphere, and enthusiasm that will continue in following years whether the field agent is there or not" (p. 128). The study's lessons for the future include:

*Field agents should represent power positions.

*A full year is not needed for training.

*Headquarters staff should visit agents two or three times per school year.

*Well-developed inservice training programs are needed by field agents.

*Trained personnel will be lost due to mobility.

Skilled trainers might serve, in one sense, to fill a part of the role of field agent, though only Man, A Course of Study (MACOS)** has been able to establish this complex role thus far. MACOS trainers/consultants (called "International Faculty") are available in many parts of the country to provide information and (as paid activities) technical assistance and inservice training.

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*A recent spinoff from the SSEC training activity is the formation of Educators for Social Studies Improvement (ESSI), P.O. Box 2217, Norwalk, Conn. 06850.

**See Appendix.

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A group of experienced consultants (called regional training representatives) is also available nationally to lead training workshops in Research Utilizing Problem Solving (RUPS), thus serving as de facto change agents when their services are called upon. Trainers for the Parent/Child Toy-Lending Library can be found in some areas, again on a paid-consultant basis.

The same role has been played heretofore, without charge to the user or trainee, by field representatives of several nonprofit R&D agencies. At least three such agencies have operated field offices at one time or another, for varying periods, to extend the reach of R&D products/processes. Both field-test sites and actual product implementation have been sought through this tactic.

Another well-established nonprofit field-agent role has been that of staff members of intermediate and state agencies, operating with state and/or federal funding and supplying materials at or below cost. Title III centers, RISE, BOCES, county offices, etc., provide well-known examples of this tactic. (A one-year "state facilitator" experiment is being launched in July, 1974, under the auspices of USOE, funded by ESEA Title III.) State agency staff, if not perceived as threatening by local personnel, can also reduce resistance to change through technical assistance efforts.

Staff members of professional organizations (such as ASCD, AASA, NAESP, NASSP, etc.) can sometimes assume certain field-agent functions, depending on how much slack can be found in a given organization's budget.

Finally, a new training package aimed at entry-level professionals interested in learning certain "dissemination" skills will be ready for distribution by 1975. Developed at the Far West Laboratory, the product is called "Marketing Educational Products."

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FIELD STAFF (advocacy):

According to Rogers & Shoemaker (1971), "commercial change agents are more important as a channel at the trial-adoption stage than at any other function in the innovation-decision process" (p. 246). For this reason, this tactic comes at the conclusion of our overall review; in a sense we have moved around a complete "circle"--from the kind of direct mail sent to a targeted list and asking directly for an order (as contrasted to inviting an educator to a workshop or simply providing information) all the way to the commercial representatives whose success depends directly on their ability to ask for and obtain firm purchase orders in specified sales territories.

Yet sales personnel can perform a variety of roles--merely delivering (e.g., milk), taking "inside" orders (e.g., haberdashery), taking field orders (e.g., spice salesmen), educating and spreading good will (e.g., medical detail personnel), providing technical knowledge (e.g., engineering consultant), selling tangibles creatively (e.g., encyclopedia sales), or selling intangibles creatively (e.g., education or insurance).* These roles can be seen to have been deliberately arranged in order of increasing difficulty; parts of some of the roles seem to correspond with the ostensible assignments given to nonprofit field agents as well.

Where the profit-making and subsidized agents differ radically is in sales management--applied, with widely varying degrees of emphasis and success, to all who hold commerical positions and only episodically (if at all) to those working in the nonprofit arena. Management tasks include:

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*See Robert N. McMurry, "The Mysteries of Super-Salesmanship," in Bursk & Hutchinson (1971).

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*developing (forecasts, objectives, policies, schedules, budgets, standards, etc.)

*directing (supervising, motivating, counseling, staffing, training, etc.)

*controlling (measuring, evaluating, correcting)

Management personnel responsible for activities of field staffs in nonprofit R&D agencies or in state education agencies are highly unlikely to have had experience in these leadership activities, nor is the reward structure likely to generate such experience in the near future.

Competitive selling in the elementary and high school marketplace usually involves quantity orders (e.g., adoption of a kindergarten-to-sixth-grade reading series) in a complex purchasing environment (school laws, regulations, policies, etc., vary from state to state). Statewide adoptions (or large-city adoptions) may entail either a basal listing or a multiple listing; 24 states have standard lists, with multiple lists now the common criterion that gives certain vendors a "license" to sell the listed items. Twenty-one states require a fixed price for a set period (length of the adoption), the median being five years. Some school districts have also begun to lease film and other audiovisual duplication rights. (SRI has predicted a 50/50 split in print vs. non-print sales by education companies by 1980.)

The major educational firms retain large promotional and field staffs to demonstrate, canvass, sell, and service a school market that spends only about 4¢ of its budget dollar on instructional materials. One firm may invest more than a million dollars in an elementary series (texts, workbooks, AV, tests, teacher guides, etc.) before a single item is ready for sale.

Since the nation has approximately 1.8 million classrooms, a major consideration for a commercial organization is allocating/determining size

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of territory, frequency of calls, quota on free materials, and earning potential. An experienced salesperson has been averaging about $20,000 plus all expenses, with salaries running 5.4% of sales, travel 2.4%, and commissions 5%--for a total selling cost of 12.8%, plus general and administrative support of 18% (Knowledge Venture Group, 1973).

To date schools have not demanded proof of effectiveness of new texts or other innovations. For the education industry, learner verification* and/or a rigorous development-and-revision cycle have seemed much too costly--except where R&D costs have been borne by federally funded projects.

According to the Knowledge Venture Group (1973), sales cost per call has been doubling every decade. Because of relatively modest purchasing capacity, one-third of the nation's 16,000+ school districts are therefore not worth calling on. Moreover, major convention exhibits (which personnel from small districts might occasionally be able to attend) have a low return on investment (in the view of the commercial sector) relative to time and expense. Local and state meetings may prove productive if they occur near the time of a specific adoption decision or are timed to release of certain categorical federal funds.

Overall the school market selects products in late winter or early spring. The personnel who call on these markets have historically received very little sales training, so that about 2/5ths of their calls are made to the wrong person in the user organization. Wise management, where it exists, tries to alter the allocation of time by field personnel in order

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*The Florida legislature recently passed an education bill (S492) that requires publishers to supply written proof of use of learner verification and revision of materials offered for adoption (Educational Marketer, June 15, 1974, v. 6, n. 16, p. 2).

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to focus principally on "profitable accounts." Performance cannot be measured by sales volume alone; the status of the organization the field person represents*, the status of the product(s), the amount of support provided, etc., may prove more significant than individual effort.

Functional requirements for the role should include: knowledge of products, ability to plan and organize work, relationships with user system, initiative and creativity in presenting products, interest in and aggressive attitude toward job, judgment and common sense, expense account control, etc. Ideally the field salesman should keep records of time spent on each call and of number of products adopted by each user in order to plan the best possible routes and the number of call-backs required. Length of time per call has a definite effect on sales volume**; hence more pupils may be affected if field personnel spend maximum time in the largest school districts.

Successful sales personnel need empathy and ego drive*** and the ability to adjust to customer reactions. Yet customers perceive sales representatives and the firms they represent as two different sources, ranking the trustworthiness of sales personnel lower than that of their firms. The role of "salesman" is held in relatively low esteem; trust is closely related to the overall character or quality of the sales presentation. The communicator's personality and what he/she says about things other than products seem vital in influencing the intended audience (Levitt, 1965).

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*For complex products, the generalized reputation of the vendor is more important in a buying decision because a favorable first hearing is assured (Levitt, 1965).

**Philip Kotler, "Operations Research in Marketing," Harvard Business Review (Jan.-Feb. 1967).

***See David Mayer & H.M. Greenberg, "What Makes a Good Salesman," in Bursk & Hutchinson (1971).

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The uncertain marriage between nonprofit R&D agencies and the commercial sector is a relatively recent development, with doubts fairly common on the part of both partners. Commercial field personnel, occupying well-defined roles, are supposed to know how to ask for an order, but they probably concentrate their efforts on selling principally to those most likely to buy.

Their goal is dollar volume of sales, though on occasion there may be a separate quota arrangement for each product line. A single representative may be carrying two very different reading series published by the same firm, thus enabling him/her to serve compatibly the needs of almost any client system. The aim is to deliver information to and obtain action from each interested potential user.

After studying the needs, drives, motives, etc., of individuals involved in a group decision, the commercial representative is in an ideal position to determine when, and what kind of, an incentive may be required to tip the balance toward the product under consideration--even including summoning a key manager from headquaters to clinch a major adoption.

Summary

Both the nonprofit field agent and the commercial salesperson use marketing segmentation and product differentiation techniques. Both seek out opinion leaders in client systems. Both may be obliged to "create" a market where none yet exists for a particular innovation.

But their roles differ--the former intending to offer service and technical assistance to help the client solve an expressed problem, the latter looking only for problems for which a ready solution exists in his/her own product line. Moreover, the reward structure differs dramatically; the goals of social marketing, being hardly comparable to commercial goals,

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lead to satisfactions that cannot be measured simply in dollars and cents.

Kotler (1975, chapter 15) has identified three major differences between social marketing and business marketing:

> "1) Business marketers typically try to meet the identified needs and wants of target markets; social marketers typically try to change the attitudes or behavior of target markets.
>
> 2) Business marketers typically feel that their major aim is to make a profit through serving the interests of the target market or society; social marketers typically aim to serve the interests of the target market or society without personal profit.
>
> 3) Business marketers typically market products and services through the medium of ideas; social marketers typically market the ideas themselves rather than products or services."

With slightly altered emphasis, those points can help clarify the difference between the two types of field agents discussed above.

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	SAMPLE TACTICS		Relative Cost Per Impression	Relative Coverage	Relative Impact	User Convenience	Feedback
IMPERSONAL	Direct Mail	INFORMATION	Low	High	Low	High	High
	Mass Media		Low	High	Low	Medium	Low
	Printed Matter		Low	(Depends on distribution)	Low	High	Low
	Professional Association		Low	Medium	Medium	Medium	Medium
PERSONAL	On-Site	DEMONSTRATION	Medium	Low	Medium	High	High
	Visitation		High	Medium	Medium	Low	Medium
	Workshop		Medium	Low	Low	Medium	Medium
INTERPERSONAL	Non-Commercial	FIELD AGENTS	High	Medium	Medium	High	High
	Commercial		High	High	High	High	High

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Ideal For	Unsuited To	Incentives Required	Best Source of Assistance	Best Source of Evidence
Installing or replacing visible, low-risk, familiar innovations	Complex innovations	Low price, ease of ordering, guarantee, bonus, etc.	Direct Mail Marketing Association	Direct Marketing
Awareness, arousal	Complex, high-cost innovations	Stimulus to act on information (limited time, special introductory offer, etc.)	Advertising agency media research department	Lucas & Britt (1963). Standard Rate & Data Service. Public Opinion Quarterly. Journal of Advertising Research.
Awareness, interest	Complex innovations requiring hands-on trial	Stimulus to act on information	Graphic arts/ promotion consultant	Sales Promotion Handbook. Robert Collier Letter Book.
Awareness of innovations, data on trials	Mass-market adoptions	Professional membership status, interaction with peers, prepaid travel to meetings	State ASCD, regional APA, etc.	Professional journals.
Trial of high-risk innovations in large LEA's	Low-risk routine adoptions	Released time for observation, testimonials	District (area) superintendent in major city.	Educational Marketer
Demonstration of complex, high-risk innovations	Low-cost, routine adoptions	Released time, prepaid travel, materials to take home, testimonials.	Diffusion staff of major R&D agency.	Turnbull, et al., 1974 SWRL, 1972 Hutchins & Dunning, 1973.
Hands-on trial.	Persuasion of university personnel	Free registration, credit, materials to take home, snacks.	NASE AASA Diffusion staff of major R&D agency.	Rosenau, 1971. Rickland, 1965.
Implementing high-risk, unfamiliar, complex training or organizational innovations.	Mass-market adoptions	Free consultation, technical assistance, targeted information retrieval service, etc.	SEA's in Utah, Oregon, So. Carolina, BOCES, RISE.	Sieber, 1973. Mick, et al., 1973.
Installing high-markup, low-risk, consumable innovations.	Low-markup, complex innovations	Free samples, entertainment, volume discounts, special deals, etc.	Marketing manager for major educational publishing organization.	Knowledge Venture Group, 1973. Journal of Marketing Research.

CONCLUSION

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No brief overview of this type can hope to do justice to so under-researched and so relatively undocumented a domain as diffusion of research-based educational innovations. In this first effort, we have assembled, according to an arbitrary conceptual scheme, an array of tactics that have been used, or might be used, to reduce the gap between research and practice. Some beginning point (such as this paper) seems required--but a continuation, revision, and updating would now seem much more important.

We have looked at tactics one by one. We have cited some studies that seemed appropriate in terms of their potential in helping to build a conceptual base. We have interlaced citations of case studies with commentary transferred from marketing and advertising research. To the extent that dissemination of this first compilation may help others in their work, the effort will be justified.

What we have <u>not</u> reported--since almost no data exist to support meaningful generalizations--is the most cost-effective tactic that can be applied at one point in time to meet a given discrepancy between innovation characteristics and user-system capacity. Common sense suggests that, for certain gross discrepancies, the only sensible change-agent tactic may be withdrawal, whereas for many lesser discrepancies, opportunities to select appropriate and cost-effective tactics will be suggested by market segmentation and product differentiation. As a general rule, we would propose that change agents not try to meet every need that appears, but rather concentrate their efforts on installing and servicing certain research-based products/processes that seem to offer some reasonable hope of solving pressing problems for identifiable and reachable portions of the total educational community.

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Most of the federal and state efforts to effect educational change seem to have thus far been focused mainly on information tactics, which generally tend to be fairly inexpensive and often rather ineffective for the intended purpose (other than as a probably necessary first step). Attempts at demonstration have been sporadic and uncoordinated. Formal field-agent experimentation (other than the ongoing commercial delivery system itself) has probably been less well conceptualized than would have been possible under "commercial" management. Cost-effectiveness studies have not yet been conducted to compare and contrast various clusters of tactics or to suggest what overall strategic mix would work best in a given diffusion/installation/utilization/maintenance problem situation. And the dichotomy between research-based "product development" and "change support" (cf. Hemphill & Rosenau, 1972) certainly has not yet been resolved at the federal or any other level.

In the policy domain this paper has tried to remain neutral. But simply pouring federal funds into one-year, unarticulated diffusion experiments seems unlikely to solve the massive problems of distribution, utilization, or monitoring of educational R&D output. If this paper has any policy implications, they might be best expressed by suggesting that all future experiments be:

*longitudinal (more than one school year)

*documented (including realistic cost figures)

*planned in advance

*rigorously evaluated

*"published" for the educational R&D community (including state and intermediate education agencies)

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*orchestrated from a central source for maximum impact.

Only in this way can a data base be developed and put into the hands of concerned educational "change agents"--those genuinely committed to sharpening skills, increasing knowledge, and perhaps even presuming to begin to construct a respectable educational change theory.

Any future policy for diffusion of educational innovations must acknowledge the need for improved documentation and cost analysis, for cooperation in exchanging hard-won information, and for a wiser utilization of heretofore scant "dissemination" resources. Meanwhile, the ideas presented here may help today's change agents in their current planning and their current doing. Before long, many change agents should be analyzing appropriate tactics to fit observable product and user discrepancies, even as they recognize how small an amount of trustworthy data has yet been accumulated and published. But the modest expertise we do possess should help to move us a long way forward in our national effort to improve educational opportunities for all children.

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APPENDIX

The entries on the following pages have been extracted from the ALERT Sourcebook of Elementary Curricula, Programs and Projects, published by Docent Corp., Pleasantville, New York.

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Individually Guided Education in A Multiunit Elementary School

The Multiunit Elementary School is one of seven programs of Individually Guided Education (IGE), a total educational system under development at the Research and Development Center for Cognitive Learning, University of Wisconsin. The Multiunit Elementary School, the first program to be developed, is a design for reorganizing school personnel to help schools improve their curriculum and/or individualize instruction. Schools which adopt the Multiunit organizational design will be able to either prepare their own student materials or adopt those which IGE is developing in the subject areas of reading, mathematics, and ecology (the second program of IGE). The five other IGE programs essentially provide services to Multiunit schools, but, conceivably, schools could use the Multiunit design without subscribing to the other IGE programs. Only the Multiunit organizational design will be described here.

The Multiunit design divides the school staff into three units: (a) The Instructional and Research Unit, comprised of a unit leader, two regular certified teachers, two aides or secretaries, and one teacher intern. Each unit must plan, carry out, and evaluate the instructional program for 150 students. (b) The Instructional Improvement Committee, made up of the principal and the unit leaders, responsible for developing the educational objectives of the entire school, interpreting state and local educational policies, and coordinating all unit activities. (c) The Systemwide Policy Committee, comprised of central office staff, principals, and representative unit leaders and teachers, establishes broad guidelines for the schools and employs consultants when special needs exist. This three-level design incorporates team teaching, flexible use of resources, and differentiated staffing. The objectives of the Multiunit design is to encourage cooperative planning and teaching, entire staff participation in decisionmaking, greater role differentation, more effective leadership and communications flow among unit members. The developers also believe that the Multiunit design allows more student-teacher interaction and on the-spot assessment of student difficulties.

/I/D/E/A/, in conjunction with the Center for Cognitive Learning, has taken the Multiunit concept and developed materials for inservice training and general assistance in implementing the Multiunit organizational design. The training materials include four twenty minute films, six brief slide films with tapes, and five books. Simple topics include descriptions of unit members' responsibilities and procedures for evaluating students' readiness, progress, and achievement. The inservice program consists of workshops, conferences, and meetings. The training continues throughout the school year until the program is running smoothly. The transition from a self-contained classroom to the Multiunit organization require careful preparation and the cooperation of staff at all three levels.

Distributor: Wisconsin Research and Development Center for Cognitive Learning, 1025 West Johnson Street, Madison, Wisconsin 53706 (608) 263-4216, in conjunction with /I/D/E/A, 5335 Far Hills Avenue, Dayton, Ohio 45429

Developer: Same

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Target Audience:
Teachers and administrators

Subject Area:
Teacher education, a program for training teachers and administrators to implement a new administrative and instructional organization.

Major Goals for Staff:
To implement successfully the Multiunit design and therefore improve students' learning opportunities through a system of individually guided education. The Multiunit design of staff provides for more teacher-student interaction, for on-the-spot assessment of learning difficulties, and for continual research and evaluation of new and existing student materials.

Suggested Use:
An inservice program to introduce staff to the Multiunit structure and train them to implement it. The program has a workshop and a continuing inservice program for teachers, administrators, aides, and some clerical helpers. School board, central staff, etc., are given an introduction to the Multiunit approach.

Length of Use
A one-week training workshop is held before school begins; a minimum of four half day inservice meetings are recommended during the year. Training continues until the program is running smoothly.

Sample Topics:
Overview of learning program, unit roles and operations, principal's role, general introduction, implementation guide. The /I/D/E/A/ materials include motion pictures, filmstrips and tapes, and books such as Unit Operations and Roles, Principal's Handbook and IGE Guidelines for Implementation.

Instructional Method:
Inservice training includes readings, discussions, viewing filmstrips, and small- and large-group meetings. The general format of the books is a discussion followed by exercises to check the user's understanding. The filmstrips contain numerous projector stops to allow for group discussion.

Staff Roles and Training:
Principal—assumes primary responsibility for setting up Multiunit design (selecting unit members, planning and securing needed materials and equipment, etc.) *Unit Leader*—provides leadership in planning and coordinating, teaches, demonstrates, and assists. *Teachers*—instructional role; work in teams to select and develop appropriate materials.

Parent or Public Involvement and Training:
Principal's Handbook includes suggestions for improving home-school relations, sample letters used to inform the community about the Multiunit design and to report on school events. (/I/D/E/A/ is developing a program of home-school communications.)

School Organization:
Three levels of administrative organization: Instructional and Research Units, Instructional Improvement Committee and Systemwide Policy Committee.

Special Equipment and Facilities:
Filmstrip projector, tape recorder, and 16mm film projector needed for training programs.

Program Evaluation:
Longitudinal study of staff roles and relationships currently underway. Preliminary data indicate that unit leaders are serving well as linking agents; there is generally higher job satisfaction and morale among Multiunit teachers than among teachers in the control schools; and Multiunit personnel are willing to experiment with educational innovations.

Present Status:
The Multiunit Elementary School is currently operating on a limited basis in seven states. The six other Individually Guided Education programs are under development at this time. The Center for Cognitive Learning and /I/D/E/A/ are currently developing the additional IGE programs. Among the programs are a system of computer-managed instructional programming and curriculum materials in reading, math, and ecology.

Availability:
Inservice training materials available since Spring 1971 to schools agreeing to participate in a field test under specified conditions.

Senior Project Staff: Herbert J. Klausmeier, Richard G. Morrow, Mary Quilling, Russell Way, James Walter

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REFERENCE

Klausmeier, H. Morrow, R. & Walter, J. *Individually guided education in the multiunit elementary school: Guidelines for implementation.* Madison: Wisconsin Research and Development Center for Cognitive Learning, University of Wisconsin, 1968. Brief introduction to Multiunit structure, staff roles, and implications of the organization. $3.00.

MATERIALS, EQUIPMENT, SERVICES, etc.; COSTS

Required Items	Quantity Needed	Source	Cost Per Item	Replacement Rate
Staff training materials:				Replacement of materials should not be necessary
3 books	1 per teacher	Wisconsin Research and Development Center and /I/D/E/A/	$3.00 ea.	
2 books	1 per principal or 1 per teacher	/I/D/E/A/	$3.00 ea.	
6 slide films	1 set per school or district	/I/D/E/A/	$11.00 ea. $66.00 for set	
4 motion pictures	1 set per school or district	/I/D/E/A/	$830.00 for set	
Services:				
Teacher aides and secretaries	At least 2 per I & R Unit		Determined by school	
Travel:				
Travel to and from Madison, Wisconsin	1 trip per principal and unit leader			
Individually Guided Education (brochure)	1 per school	/I/D/E/A/	$1.50	

Information current as of April 1971

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IPI Mathematics

IPI Mathematics is a continuum of mathematics skills running from first through sixth grade and a system for managing the student's learning in such a way that he attempts each skill only when he has proved that he has mastered all the prerequisite skills. Developed over a ten-year period at the University of Pittsburgh's federally funded Learning Research and Development Center, it has been field tested and revised in conjunction with the regional educational laboratory in Philadelphia, Research for Better Schools. It is now available from a commercial publisher. The title of the curriculum, "Individually Prescribed Instruction," refers to the unique study plan called a prescription, which the teacher makes daily for every student on the basis of the results of placement tests the student takes at the start of each new achievement level (seven levels in all), and pretests and posttests he takes at the beginning and end of each unit within a level. (Each unit deals with a specific topic, such as multiplication, at a particular level.) The prescription is intended to insure that the student does not have to spend time doing lessons on skills he already knows, nor tackle lessons for which he lacks the prerequisite skills. Instruction is presented in booklets for each of the 350 skills in the curriculum. The booklets require little reading. For poor readers some beginning lessons are available on tapes.

IPI thus individualizes the ***pace*** at which the student moves through a curriculum of mathematics basics. It leaves to the teacher the task of individualizing the ***style*** in which the student learns and the option of supplementing the arithmetic basics with other mathematical experiences. There have been criticisms that the IPI isolates the student from both teacher and fellow students and narrows his experience to traditional rules mastery and paper-and-pencil drill. Critics also point out that learning psychologists still know comparatively little about the composition of the young child's mathematical knowledge and the means by which he acquires it, so that a program based exclusively on the learning objectives identified by IPI may be oversimplified and not truly individualized. In response, IPI supporters lately emphasize the opportunity which the program gives the teacher to pay closer heed to the individual student's learning and social behavior, so that far from becoming a mere technician she can become more of a professional, shifting his attention from what is "normal" about a student to what is unique about him. "IPI has given teachers instruments for evaluation of the individual and the beginning set of materials to use . . . . In an IPI model, the teacher actually has more contact with his students. The teacher must work closely with the student in a one-to-one situation when the (IPI booklet) is not meeting the student's needs, and also plan small seminars and tutorial lessons . . . ." Others familiar with IPI stress the efficiency with which it teaches basics, perhaps requiring as little as one-fourth the amount of time that traditional classrooms devote and thus freeing children for more interesting learning. Research for Better Schools field studies, which do not indicate superior performance on standardized achievement tests by IPI students, do show students' and teachers' marked preference for IPI over former traditional teaching methods.

Distributor: Appleton Century Crofts, 440 Park Avenue South, New York, New York 10016 (212) 689-5700

Developer: Learning Research and Development Center, University of Pittsburgh 160 North Craig Street, Pittsburgh, Pennsylvania 15213; and Research for Better Schools, Inc., 1700 Market Street, Philadelphia, Pennsylvania 19103

Target Audience:
Students of all abilities, grades 1-6.

Subject Area:
Mathematics, stressing computation.

Content Emphasis:
Numeration and place value. Addition and subtraction. Multiplication. Division. Fractions. Money. Time. Systems of measurement. Geometry. Applications.

Major Goals for Students:
To master the 350 mathematics objectives in the curriculum. To work at his own pace without regard to grade level or to the progress of his classmates. To gain a sense of responsibility for his own work and independence in learning.

Project Goals:
To construct a hierarchy of learning objectives in mathematics and design a system of diagnostic instruments which a teacher can use to evaluate each student's progress each day and assign a learning program tailored precisely to fit his needs.

Suggested Use:
Complete mathematics skills program in a nongraded school, may be supplemented by math activities with manipulative materials and/or modern math abstract topics.

Length of Use:
Daily math period throughout elementary school.

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Unit Sequencing:
All lessons fit into a carefully built continuum of 350 instructional objectives. All the lessons in the same topic and at the same level comprise a unit. The student works through one unit at a time, his assignment being determined by the placement test he takes upon entering each level of instruction. During one school year he may do units at several different levels, for instance, multiplication at Level C, measurement at D, fractions at B. Within the unit, the lessons he does are determined by his unit pretest. A lesson may be repeated if the student does not pass "curriculum embedded tests" within the lesson or the posttest at the end of the unit.

Instructional Method:
Self-paced booklets for instruction, practice, and testing, supplemented by teacher tutoring, peer tutoring, and/or small-group instruction.

Student's Role:
The student takes placement tests each year or more often, and pretests starting each new unit. Following the teacher's written prescription directing his daily work, the student gathers his learning materials and does exercises by himself in the prescribed skill booklet. These exercises may be supplemented by work with manipulatives, tutoring, or small-group seminars. At the end of the unit he takes a test to determine whether he can proceed, frequently correcting his own work.

Teacher's Role and Training:
"The teacher needs to spend less time preparing materials, lectures and activities to be used by the entire class at one time and more of her energies thinking about tutoring situations and self-instructional materials. The teacher needs to know more about the subject matter, since she comes into closer contact with more students who are having trouble and who need her to identify what their problems are and how to remedy them. She needs to know how to build upon the child's own self-initiation and control to help accomplish academic ends and spend less energy teaching him to conform to a group expectancy . . . . The teacher is given data on each student from an objective instrument and is asked to make decisions about the student's mastery and needs, based on the data." The teacher interprets placement tests, unit pretests and posttests, and Curriculum Embedded Tests within each lesson, to make work assignments for each child daily. Training for the teacher is required. The principal conducts a workshop for teachers before IPI is introduced into a school.

Administrator's Role and Training:
School principals using IPI for the first time must attend a three-day training session given by the publisher in a demonstration school. There is no charge for the workshop but trainees must pay their own expenses. If a school orders materials for more than 400 students, two administrators are trained, if more than 800 students, three administrators are trained.

Paraprofessional's Role and Training:
One paraprofessional aide is needed for every 75-100 students to assist the teacher in clerical management of the program materials and student's records. Aides must be trained by the principal in a workshop separate from that for teachers.

Student Testing:
The placement test for every level after the first determines the level each student works at in each topic. Pretests are administered on all units prescribed for a student in order to determine what skills within the unit he needs to work on. During each lesson the student takes Curriculum Embedded Tests which monitor his progress. After each unit he takes a posttest before being allowed to go on to the next unit in his prescription. The child must have 85 percent of each test correct in order to be considered to have mastered a skill or a unit.

School Organization:
Nongraded school.

Special Equipment and Facilities:
Resource center with shelves in which to store skills booklets. If a school wishes to use the tape cassettes which are available for beginning skills lessons, it will need to provide Audio Frame System tape players and headsets.

Program Evaluation:
Learning Research and Development Center's and Research for Better Schools' extensive field testing of IPI shows "on standard achievement tests IPI pupils do as well as non-IPI pupils." Students and teachers are reported to prefer IPI to traditional instruction. Higher student motivation and sense of achievement are reported.

Availability:
The same publisher also publishes a simpler less comprehensive, supplementary version of IPI math, called *Math Modules.*

Senior Project Staff: Robert Glaser, Learning Research and Development Center; Robert Scanlon, Research for Better Schools; Elinor C. Murphy, Manager, Customer Service, Appleton-Century-Crofts School Department

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A progress report: Individually Prescribed Instruction. Philadelphia, Pa.: Research for Better Schools, Inc., September 1969.

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Suydam, M. & Weaver J. Planning for instruction, Instructional materials and media, bulletins in the series, *Using Research: A Key to Elementary School Mathematics.* University Park, Penn.: Center for Cooperative Research with Schools, The Pennsylvania State University. *Or* order from ERIC Center for Science and Mathematics Education, 1460 West Lane Avenue, Columbus, Ohio 43210.

MATERIALS, EQUIPMENT, SERVICES, etc.; COSTS

Required Items	Quantity Needed	Source	Cost Per Item	Replacement Rate
Set of Skills Booklets, tests, teacher's continuum chart and answer keys	One year's supply for 150 students*	Appleton-Century-Crofts	$6.50 per student (minimum of 150 students)	Consumable
Principal's training workshop	1 principal will be trained for every 400 students in the school	Appleton-Century-Crofts	No charge for workshop. Manual costs $10.	
Recommended Supplementary Items				
Tape cassettes (Audio Frame System) for approximately 20 lessons at first two levels	1 each per classroom	Appleton-Century-Crofts	$5.00 ea. approx.	Reusable

* This charge pays for enough materials for normal use by 150 students. Each class receives those skills booklets which are appropriate for the age and achievement levels of the students during a year's instruction. Additional materials can be ordered at nominal cost.

Information current as of April 1972

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The Kindergarten Program

The Kindergarten Program was developed by the Southwest Regional Laboratory for Educational Research and Development to provide children from every kind of background with beginning reading skills as early as kindergarten. Before commercial distribution it had been entitled First Year Communication Skills. The complete program consists of the Instructional Concepts Program and the Beginning Reading Program. However, the Instructional Concepts program (see the separate description under that title) is considered necessary only if the children have not mastered such concepts as color, size, shape, and position, and have not been equipped with pre-reading skills. Widescale field testing has shown that children in the Kindergarten Program can successfully read a specified number of words by sight and can master beginning word attack and comprehension skills. The developers feel that the program's goal has therefore been attained.

The Beginning Reading Program is designed to develop basic reading skills sequentially and to "ensure that beginning reading will be a pleasant and successful experience for the young child." The developers add that "the program is designed to maximize the child's active participation in the learning process." They also state that "the program words were selected by linguists and learning psychologists to meet these criteria: (1) they are common in the vocabulary of beginning school children; (2) they include a combination of regularly spelled words and high usage function words; (3) their component sounds combine to form many additional words; and (4) their sound combinations facilitate the efficient learning of the word attack process." In an early lesson, the students learn the word elements *it* and *et* by means of flashcards; learn to read one-syllable words ending in *-at* and *-it* when given their sounds; learn to sound out and read the words ***mit, sit,*** and ***meet;*** then read the words from flashcards or from related storybook sentences. The teacher's manual outlines the appropriate skills, activities, and materials required, and notes the entry skills the children should possess before beginning instruction on a new skill. Teacher training is required for both parts of the Kindergarten Program.

The developers make no recommendation concerning appropriate continuation series for grade 1 and beyond. They emphasize that, in order to maintain the skills the children have acquired in the Kindergarten Program, teachers must exploit those skills by using procedures similar to the ones outlined in the Beginning Reading Program. However, as part of a large-scale effort to develop a computer-based management system for individualized learning - the Learning Mastery System - SWRL has prepared a series of instructional outcomes, criterion exercises, and practice exercises related to several commercial reading programs for grades 1-3. The only charge for the materials is that of duplication. Contact SWRL, Division of Resource Services, for further information.

Available supplementary programs for the Kindergarten Program are the Tutorial Program, which provides training and materials for older students to act as tutors in practice sessions; the Parent-Assisted Learning Program (PAL), in which parents assist their children at home with class-related practice lessons; and the Summer Reading Program, which should assist the children in retaining the skills learned.

Distributor: Ginn and Company, 191 Spring St., Lexington, Massachusetts 02173

Developer: Southwest Regional Laboratory for Educational Research and Development (SWRL), 11300 La Cienega Blvd., Inglewood, California 90304

Target Audience:
Kindergarten students of all abilities and backgrounds

Subject Areas:
Readiness and beginning reading. Instruction in the basic skills necessary for communication, including pre-reading and direction-following skills, is intended to give the child a strong foundation for future success in reading.

Content Emphasis:
Basic concept development. Basic reading skills (word elements, letter names, one-syllable words). The independent Instructional Concepts Program should begin three weeks before the Beginning Reading Program, then be used concurrently.

Major Goals for Students:
To acquire reading vocabulary of approximately 100 words; ability to read representation of 23 initial and ending sounds; ability to name letters of alphabet on sight; ability to sound out and read one-syllable words composed of word elements from the program; comprehension of words in context.

Project Goals:
To develop a basic reading skills program for kindergarten children of all socioeconomic backgrounds.

Suggested Use:
Basic reading skills program for kindergarten.

Length of Use:
Instructional Concepts Program, approximately 20

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minutes daily for 5/6 days. Beginning Reading Program, 2½-30 minutes daily for one year.

Unit Sequencing:
Beginning Reading units are arranged sequentially, beginning with sight words, simple word elements, word attack skills, and the letters of the alphabet, and progressing to more difficult words and skills. Specific objectives or "outcomes" are stated for each unit.

Sample Topics:
Sight Words: (net, ran, sad, no, fill, sheet, shut, mud, in an early unit). Word Elements (ut, sh). Word Attack (sound out and read words with elements already taught). Letter Names.

Instructional Method:
Teacher-directed development of beginning reading skills. The teacher's manual lists the skills or activities for each unit, the materials used to teach the skills, and the necessary entry skills, where applicable. The manual also includes reminders to administer the Criterion (checking) Exercise after each unit and to follow up with appropriate Practice Exercises, as necessary. The developers emphasize that individual students must learn the skills of each unit before going on to the next.

Student Testing:
Criterion Exercises to check the pupil's progress are provided for each unit.

Late-entering Students:
Entry Behavior Tests are provided, to determine which skills students may be deficient in. Results of the test indicate to the teacher the areas in which they need additional practice.

Student's Role:
To respond when called on during lessons, either individually or in groups; to follow teacher's instructions, read from storybooks, play games designed to heighten interest in lessons. In Unit 3 of Beginning Reading, student activities include reading the new word ***sat,*** drilling the flashcards, reading a storybook, saying the sounds represented by ***th, n,*** and ***an,*** and completing a Criterion Exercise.

Teacher's Role and Training:
Teacher guides students' acquisition of skills. For each kind of activity (using flashcards, storybooks, oral word index, comprehension sheets, etc.) teacher procedures are given in the teacher materials. Training required and materials available with program.

Parent Involvement and Training:
Supplementary Parent-Assisted Learning Program (PAL) and Summer Reading Program available for use by parents and children at home. PAL emphasizes parent-monitored practice on classroom-related skills. The teacher provides three home practice exercises per week. A ninety-minute parent training session is held when the program is initiated. The Summer Reading Program consists of ten packages of practice materials for parents to use with their children for approximately fifteen minutes a day, three days a week, for ten weeks during the summer. An instruction pamphlet is included.

Peer Tutoring:
A supplementary Tutorial Program trains students in grades 4-6 to act as tutors to children in the Beginning Reading Program.

School Organization:
Arrangements must be made with administrators and teachers of intermediate classes regarding tutor selection and training when a supplementary Tutorial Program is used.

Special Equipment:
Filmstrip projector, cassette tape recorder, and 16mm film projector required for teacher training materials.

Program Evaluation:
Extensive field testing and revision on basis of pupil performance data and teacher evaluation. The Beginning Reading Program was field tested with approximately 120,000 students; the Instructional Concepts Program with 80,000. Results indicated that SWRL's goals of 80 percent of the students achieving 80 percent of the criterion measures was achieved.

Forthcoming:
A Quality Assurance Manual, with special instructions for using the program, is being prepared by SWRL. A publication date has not yet been determined.

Availability:
All program and training materials should be in stock by the end of April 1972.

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MATERIALS, EQUIPMENT, SERVICES, etc.; COSTS

Required Items	Quantity Needed	Source	Cost Per Item	Replacement Rate
Instructional Concepts:				
Classroom set, including student books, teacher materials	1 set per 30 students	Ginn	$90.00 initially, $69.00 for replacement set	Consumables yearly
Teacher training kit with 2 filmstrips & audio cassettes, print materials	1 kit per 10 teachers	Ginn	$42.24 initially, $6.93 for replacement set	Consumables yearly
16mm sound/color training film	1 per school or district	Purchase Ginn*	$60.00	Reusable
Reading:				
Classroom set, including student books, Criterion Exercises, Criterion Tests, etc., and teacher manual, flashcards, procedures, etc.	1 set per 30 students	Ginn	$173.85 initially, $162.00 for replacement set	Consumables yearly
Teacher training kit, with 2 filmstrips, 3 audio cassettes, print materials	1 kit per 10 teachers	Ginn	$55.38 initially, $19.26 for replacement set	Consumables yearly
16mm sound/color training film	1 per school or district	Purchase Ginn*	$60.00	Reusable
Recommended Supplementary Items				
Tutorial Program: Training, tutoring, and record keeping materials	1 set per 12 tutors	Ginn	$40.92 initially, $19.92 for replacement set	Consumables yearly
Parent Assisted Learning Program kit, guides, exercises	1 per 10 parents & students	Ginn	$19.92	Consumable
Summer Reading Program kit: books, exercises, guides	1 per 10 parents & students	Ginn	$15.00	Consumable
16mm sound/color training film, support systems	1 per school	Purchase Ginn*	$60.00	Reusable

* The three training films can be rented for $10.00 each, or $20.00 for two or three, from Association-Sterling Films. Contact their main office (600 Grand Ave., Ridgefield, New Jersey 07657) for the addresses of their regional distribution centers.

Information current as of March 1972

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Man: A Course of Study

Man: A Course of Study is a one-year, fifth-grade social science program based on cultural anthropology. The course is intended to stimulate children to think about the nature of man. The materials are designed to provoke questions about the common impulses and behaviors that unite man as a species and about the biological ties that unite man with other animals. Students compare themselves—specifically their structures, behaviors, and environments—with those of salmon, herring gulls, baboons, and Netsilik Eskimos. Through understanding ways of life different from their own, the students may gain a new perspective about themselves and the culture they share. They should also become aware of the effects that cultural differences have on human behavior and judgment.

The program is built around a set of films, many of which were specially commissioned by the authors. The course also uses filmstrips, records, student booklets, and games. Detailed teacher's guides contain daily lesson plans which discuss purposes, preparation, questions, activities, homework assignments, and possible variations on the lesson. The typical lesson follows this pattern: introduction, film viewing or reading, class or group discussion, other class activities such as games, searching for pictures, art projects, etc. During class, students share observations, ask questions, search for information, and hypothesize about what they see and hear. Students and teacher work together to provide direction and reinforcement for each other. The teacher is a resource person, not an authority figure.

An example of the student and teacher activities is the lesson on "animal adaptation." First, the concepts of structure and behavior are defined by the teacher, who uses pictures to illustrate the concepts. The class reads a brief booklet on structure and function and answers questions which test their understanding of the material. Next they discuss the structure and behavior of many animals: one child names an animal, another names a structure of that animal, and others describe the behaviors that go with the structure. Pictures are used to relate the structures and behaviors to the environment of each animal discussed. Man's structures and accompanying behaviors are then discussed. Finally, questions are raised to stimulate the student to examine man's relationship with his environment, such as "How do your structures and behaviors help you survive in your environment?"

Distributor: Curriculum Development Associates, 1211 Connecticut Avenue, N.W., Washington, D.C. 20036

Developer: Social Studies Program, Education Development Center, 15 Mifflin Place, Cambridge, Massachusetts 02139

Target Audience:
Fifth grade students, all ability levels. Experience with the program indicates it may be more suitable for grades 6 and 7. It is also judged by some to be too much material to cover in one year.

Subject Area:
Cultural anthropology is the primary subject area; some of the topics are taken from biology, communication, and sociology as well.

Content Emphasis:
Concepts from cultural anthropology, such as life cycles, ecology, environment, biological and social structures, behaviors, and values.

Major Goals for Students:
The developers goals are "to give students confidence in the powers of their own minds, to give them respect for the powers of thought concerning the human condition, man's plight and man's potential, to provide them with a set of workable models for analyzing the nature of the social world in which they live, the condition in which man finds himself, to impart an understanding of the capacities of man as a species in contrast to other animals, and to instil concern for the human condition in all its forms, whatever race or culture."

Suggested Use:
The program has been developed as a complete, one-year social studies course for grade 5; it could also be used in either grades 4 or 6. Schools may use the films alone to supplement their regular curriculum; individual films may be rented or purchased from independent distributors. A list of these films and distributors is provided on request by EDC.

Length of Use:
One academic year. The course is divided into four major sections. Three are designed for one semester; the fourth covers the second semester.

Unit Sequencing:
The units are sequenced according to the increasing complexity of the life forms studied, moving from salmon to herring gulls, baboons, and Netsilik Eskimos. Concepts such as structure and function, behavior, and environment are introduced early in the course. As the program develops, they are constantly reintroduced in greater complexity, culminating with the study of man.

Sample Topics:
Sample lesson topics are Life Cycle of the Pacific Coast Salmon, The Behavior of Gulls in Groups, Methods of Studying Baboons, How the Netsilik Tools are Used, The Bow and Arrow Games, Family Ties and Expected Behavior. Sample film titles are Miss Goodall and the Wild Chimpanzees, Fishing at the Stone Weir, and Animals in Amboseli. Booklet titles include Life Cycle, Animal Adaptation, Structure and Function, and Baboon Communication.

Instructional Method:
The strategy is to encourage students to think, to ask questions, to discuss, to hypothesize, and to develop their powers of observation. Both the films and student booklets are written to stimulate high levels of interest, as are suggested activities included in the detailed lesson plans.

Student Testing:
No prepared tests provided. "The teacher must use his own style and judgement in evaluation." It is suggested that the students be evaluated using such criteria as class participation, willingness to do independent work, and grasp of ideas as measured by level of his discussion.

Late-entering Students:
Because of the increasing complexity of concepts and the vocabulary development, the late-entering student would need teacher guidance before he could participate meaningfully in class.

Student's Role:
To share observations, ask questions, search for new information, and hypothesize about what he has seen and heard. In a typical lesson, the student might watch for certain actions in a film, discuss his impressions with other students, reflect on ways he is like the people or

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animals he saw in the film, read magazine articles or course booklets, talk over his lessons with his parents, make pictures showing his ideas, etc.

Teacher's Role and Training:
The teacher's role is to be a resource person, not an authority figure. The developer considers the class a "community of learning." By working together, students and teachers provide direction and reinforcement for each other.
"Seminars for Teachers," the inservice training package, contains both background materials and detailed instruction in the course's teaching strategy. Summer training institutes are held throughout the U.S.; a list is available from EDC. The inservice training institutes and materials were developed at the request of trial teachers.

Special Equipment and Facilities:
A super 8mm sound cartridge projector or 16mm sound projector, filmstrip projector, and record player are necessary. The filmstrip projector and record player should be readily available to the students in each class.

Program Evaluation:
Program was field tested extensively in 80 schools in 14 school systems by the project staff. "On the average, students doubled their knowledge of specific aspects of the course and grew in their ability to reason." There was little relationship between I.Q. and scoring gains. One of the few research studies published on the program is the two-volume study by Hanley et al. (1970).

Availability:
Fall 1970

Senior Project Staff: Director, Peter B. Dow; Consultants, Jerome S. Bruner, Irven DeVore, and Asen Bakikci

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Joyce, W. W. MACOS: A report from the inner city. *Social Education,* March 1971, *35* (3), 305-308.

Sanders, N. M., & Tanck, M. L. A critical appraisal of twenty-six national social studies projects. *Social Education,* April 1970, *34* (4), 389-390.

Selerian, A., & Cole, H. P. *Encounters in thinking: A compendium of curricula for process education.* Syracuse, New York: Eastern Regional Institute for Education.

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MATERIALS, EQUIPMENT, SERVICES, etc.; COSTS

Required Items	Quantity Needed	Source	Cost Per Item	Replacement Rate
Complete package of student and teacher materials	1 package per 150 students and 5 teachers	Curriculum Development Associates	$3200.00* for complete package	Reusable–very durable
23 student booklets	1 per student	Curriculum Development Associates		Reusable
16 films (16mm or super 8mm cartridges)	1 set per five classes	Curriculum Development Associates		Should not need replacement
7 animal studies booklets	10 sets per class	Curriculum Development Associates		Reusable–very durable
Filmstrips, records, maps, charts, games	10 sets per class	Curriculum Development Associates		Reusable
7 teacher guides	1 set per teacher	Curriculum Development Associates		Reusable

* Schools may order a super-8mm cartridge projector within the package for an additional $295.00.

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Minicourse 1: Effective Questioning (Elementary Level)

Effective Questioning is one of a series of minicourses developed by the Far West Laboratory for Educational Research and Development. The minicourses are based on the Stanford microteaching program; teachers watch films demonstrating specific teaching skills, practice using a skill by microteaching (teaching a short lesson to a small number of students), and videotape their performance so they can evaluate themselves afterwards. By repeating this sequence for a number of skills, teachers can help themselves improve their teaching ability. The immediate feedback via videotape provides strong reinforcement for skills the teacher wishes to cultivate.

Effective Questioning is aimed at developing the teacher's ability to ask questions in class discussions. He learns ways to reduce the amount of time he talks in class, to encourage in-depth student responses to questions, and to avoid certain teacher behaviors that can interfere with class discussion. As he works on a specific skill, the participant follows this instructional sequence: he reads an appropriate section from the Teacher Handbook, views an instructional film, plans a microlesson (5-15 minutes), microteaches the lesson (while videotaping it), views the videotape to evaluate his performance, replans the lesson, reteaches and retapes it, and reevaluates his performance. The teacher uses the minicourse's self-evaluation forms to judge his performance at each stage. Direct supervision is neither required nor suggested, so the teacher is free from the anxiety frequently associated with programs using videotapes of the teacher's performance.

The effects of the Effective Questioning course on teacher behavior may be seen through some of the results of field testing. Before taking the course, participating teachers talked in class discussions about 52 percent of the time; after the course they talked only 28 percent of the time because they had learned to encourage more student participation. Before the course, only 37 percent of the teachers' questions asked the students to make higher cognitive responses (such as formulating hypotheses instead of just recalling facts); after the course, 52 percent called for such responses from students. As a result, student responses to teacher questions actually doubled from an average of 5 words to an average of 12 words after the course.

Distributor: The Macmillan Company, Front and Brown Streets, Riverside, New Jersey 08075

Developer: Teacher Education Division, Far West Laboratory for Educational Research and Development, 1 Garden Circle, Hotel Claremont, Berkeley, California 94705

Target Audience:
Teachers of all subject areas.

Subject Area:
Inservice or preservice teacher education.

Content Emphasis:
The course emphasizes the skills a teacher should use to effectively ask questions in the classroom.

Major Goals for Trainees:
Participating teachers (trainees) should learn to increase the frequency of questions in their classes, raise the cognitive level of their students' responses, and reduce the amount of time they (the teachers) talk in class, thereby increasing the amount of time the students talk.

Suggested Use:
Inservice or preservice teacher training programs. The course may be taken by one or more teachers at the same time; the teacher could view the films together but would complete the microteaching lessons individually. The course could also be used at the college level to train prospective teachers.

Length of Use:
Initially, about three hours per week for five weeks. Monthly follow-up lessons are used to reinforce acquired skills.

Training Materials:
Eleven reels of instructional and model lessons on 16mm color/sound film, Teacher's Handbook, including self-evaluation forms. Trainees may also wish to read the supplementary materials for coordinators.

Coordinator's Materials:
Coordinator's Handbook, including follow-up lessons. Supplementary reading would include *The Minicourse in Your School* (a brief information booklet) and *The Minicourse: A Microteaching Approach to Teacher Education* (background and testing results of FWL's teacher education program).

Unit Sequencing:
Skills and concepts are sequenced according to increasing difficulty.

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Sample Topics:
How to increase pupils' readiness to respond to questions and participate in discussion, ways of using probing techniques to manage student answers, teacher behaviors that can interfere with a lecture-discussion.

Instructional Method:
Autoinstructional, self pacing, coordinator guidance. The basic instructional sequence is instruction, micro-teach, and re-teach.

Trainee Testing:
Teachers evaluate their own performance; the minicourse contains no provision for evaluation by anyone else. Self evaluation forms are provided.

Trainee's Role:
The teacher's training activities relate closely to his regular classroom activities. He spends most of his time teaching, planning mini-lessons, recording the lessons, and reviewing and evaluating his own performance.

Coordinator's Role and Training:
To interest teachers in taking the course; to introduce the course and method to teachers; to set up a course schedule; to provide guidance, upon request, to participating teachers; to train teachers to use the required audio-visual equipment, to make minor repairs of AV equipment. A coordinator's handbook is provided. Any staff member could be trained as coordinator, although the role is usually filled by a principal or district supervisor.

Special Equipment and Facilities:
Videotape machine; blank videorecording tapes. A complete videotape system (viewing and recording equipment only) costs about $1800.00. Blank tapes cost $10.00-$15.00 each.

Program Evaluation:
The minicourse underwent an extensive cycle of three field tests; materials were revised where appropriate after each test. Field test results indicate that teachers increased their ability to direct questions to more than one student, to prompt and clarify, and to ask questions calling for higher cognitive responses; they decreased the number of times they repeated their own questions, and the amount they talked in a discussion. There were no changes in asking pupils to relate their answers to other materials. The length of pupil responses also increased, and the number of one-word pupil responses decreased.

Availability:
Fall 1970

Senior Project Authors: Walter A. Borg, Marjorie L. Kelley, Philip Langer

REFERENCE

Borg, W. A., Kelley, M. L., Langer, P., & Gall, M. ***The Minicourse: A microteaching approach to teacher education.*** Beverly Hills, California: Macmillan Educational Services, 1970.